The Builder.

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The New Hungarian Houses of Parliament, Budapest.—Herr E. Steindl, Architect :—

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Interior of the House of Lords ..... *Double Page Ink-Photo.*
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Dr. Flinders Petrie's Excavations at Koptos, Egypt.

WE have already referred (see our issue for July 28, page 52) to the exhibition of various objects, the results of Dr. Flinders Petrie's last season's work in Egypt. These are still on view in the gallery set apart for the Edwards Bequest at University College, Gower-street, and the exhibition will remain open to the public, without card of admission or any other formality, until the end of August.

Dr. Petrie has already pursued researches at more than one site selected with some special object. Thus the work of the year before last was at Medum, in order to discover if there were traces of very early sculpture and work anterior to that of the Twelfth Dynasty, which he had previously investigated at Kahun. The excavations produced evidences that the pyramid was the work of Seneferu; and the small temple found in front of it proved to be the work of the same king—one of the most ancient little buildings remaining in the mysterious land of Egypt, and one of the most perfect. We may express gratification at the fact that, to save this little treasure of ancient work from the searchers for building stone, it was again covered over with the excavated earth.

The exhibition of last year revealed the peculiar art to be found at Tell-el-Amarna, and nowhere else in Egypt. The buried heaps of the city founded by Khuneaten and destroyed by his immediate successors were excavated, and a new page of Egyptian art was revealed, showing a naturalistic school of design which appears to have sprung into existence and to have disappeared with the short-lived king.

The researches which have produced this year's exhibition were undertaken with a clearly-defined object. It was to discover, if possible, traces of the earliest works of the Egyptian race, and to throw light upon the question as to whence the people came, and when.

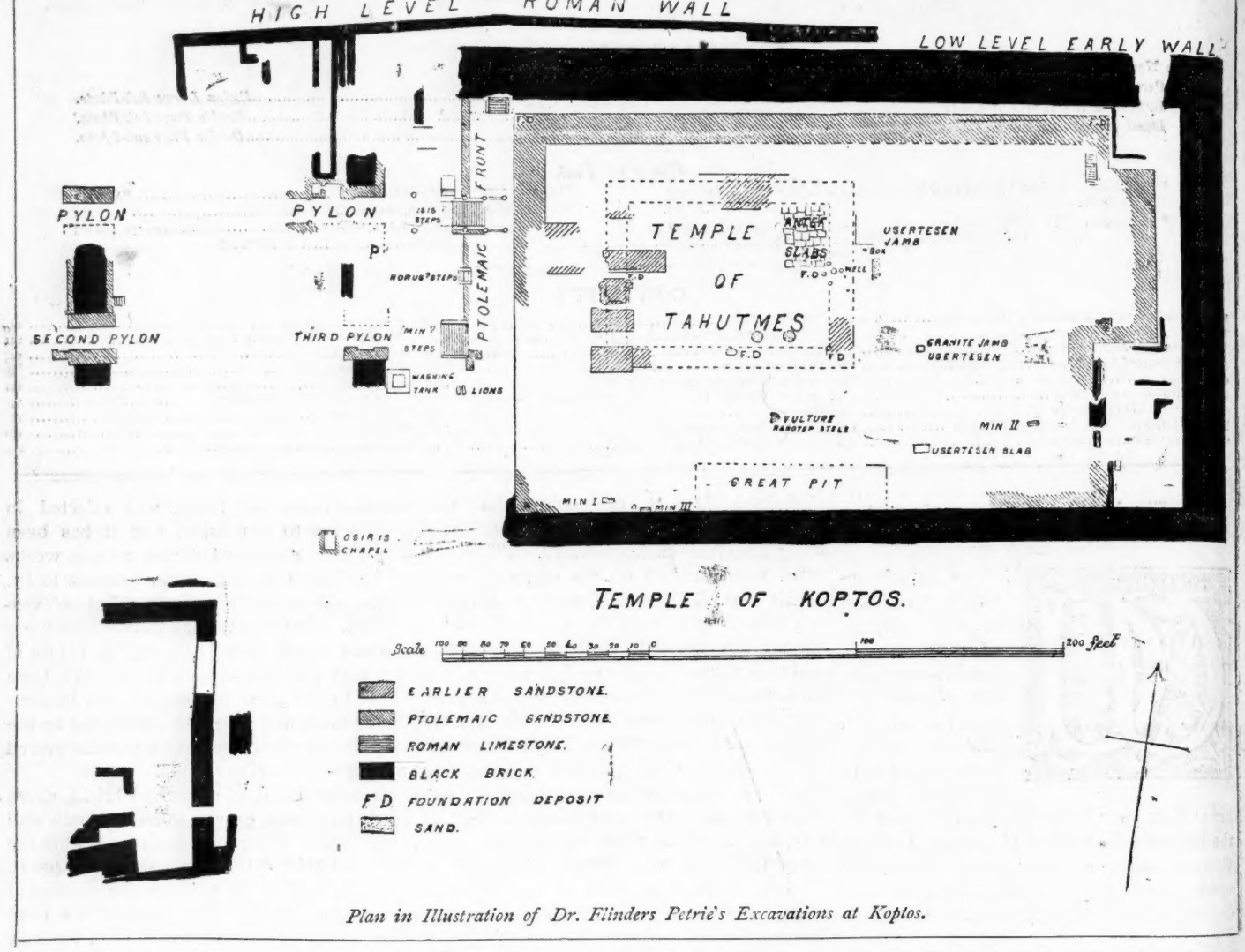
In the dim traditions of the past, and in more than one inscription, the holy land of Punt is referred to, with the belief, strengthened by many ethnological evidences of race, of language, and of arts, that this land lay to the east, and that the people, like so many others, journeyed away from the east, westward. There is a small town, marked on the maps variously as Keft or Koft, which many a traveller has passed by without thinking it worthy of staying his course to Thebes to investigate, and which, from the time of Norden to our own, hardly comes in even for notice beyond that of the mere name, even if this is mentioned. And yet this town, if the name can be given to the small group of poor-looking dwellings which at present forms it, has played an important part in the history of Egypt. It stands about twenty-five miles away from the once huge metropolis of Thebes, on the east bank of the Nile, and from it the main roads across the Eastern desert branched out, one proceeding almost directly east to the ancient town on the banks of the Red Sea now represented by Kosseir, and another going south-east to the sheltered but far-off port of Berenice. One or other of these ancient routes, used so constantly as a means of communication between Egypt and the Eastern world beyond, was likely enough to be the way by which the earliest immigrations were made into the land. But where is Punt? Is it merely the arid deserts of Arabia on the opposite side of the Red Sea? or is it the more congenial land of Persia beyond it? Or is it India? Certain, however, it is, that the earliest races, as apart from what appear to be the aborigines, have been recognised by attributes which speak of Semitic origin; and their love of the arts and their intelligence have already been alluded to.

The modern town is known to have been the site of the ancient Koptos, and here, where the roads from the seaboard terminated, Dr. Petrie determined to devote his energy, considering that here, the first point where immigrants from the East would come upon the waters of the Nile, would be perhaps the most likely spot for their first settlement to be made. Abydos is known to be a site of very early foundation, but it is far more to the north, and likely therefore to have been occupied in later years, after the first arrival of the incoming race, when they had so far mastered the land and developed themselves. At Koft was the well-recognised site of a temple, robbed all but entirely of its stonework by the villagers, but not yet ransacked by that enemy of all knowledge, the modern digger of antiquities merely for commercial purposes.

The temple site, being the one special object in the town likely to indicate the best traces of ancient times, was selected in preference to any other, and it has been thoroughly excavated during eleven weeks of hard work in the manner peculiar to Dr. Petrie, who never leaves any object uninvestigated. The excavations have yielded important results, fully justifying the choice of the site, and the objects found have been made to tell their history, not only by their inscriptions and other evidences, but by the positions in which each object was discovered having been carefully noted.

A huge length of sun-dried bricks, shorn of its face work, proved to be the south wall of enclosure of the ancient city. Within the enclosed area of the town, and about 400 ft. from the wall to the east, are the remains of the great temple. The excavations have determined its ground plan. With walls in some cases 25 ft. thick, it measured 322 ft. from east to west, and 218 ft. from north to south, internally, the walls being formed of sun-dried brick. The axis, to be exact, however, is 9 deg. north of east. To the west, outside the enclosing walls, and between them and the town wall, distinct traces were met with of three pylons, or entrance gateways, in addition to a fourth in the wall of the town itself. Two of these were in line with each other from north to south, like two gateways in the same wall. In front of the great temple were traces of three flights of steps, of different dates, and of a front of later workmanship, of the time of the Ptolemies. It was wisely determined to excavate the whole of the area of the site, especially of the space within the temple walls. The pickaxe and spade speedily revealed traces of other buildings within the enclosing area, which latter itself proved to contain a larger area than had at one time been the case, for walls of the same date as the front, built of sandstone, were found within them on three sides, arranged close to them, but just a little only out of parallel. Within the temple enclosure, the progress of the excavations revealed the outline of the temple proper, situated in a position not central with either sets of the enclosing walls, and nearer to the west than to the east.

The traces of the walling were not very distinct, but the building appears to have measured 97 ft. from east to west, with a width of 70 ft. There were no traces left as to how this wide space had been roofed over, which is somewhat extraordinary supposing that the temple had followed the usual arrangement in being covered over. The absence of traces either of columns or of



Plan in Illustration of Dr. Flinders Petrie's Excavations at Koptos.

their masonry foundations suggests the supposition that, if roofed at all, it was by timber supports and beams. A large mass of walling, it is true, was found just within the west front, but in no symmetrical position, and no corresponding mass was found on the south side. A curious discovery was made when the excavations reached the north-east angle. Here traces of a limestone pavement were found, of irregular-sized blocks, fitted badly to each other. These were taken up, and were found to be facing slabs of earlier work, covered with sculptures. On being freed from their mortar bedding, they proved to be of the time of Antef V., and part of the temple built by him. It was evident that at a very early date, most probably on the recorded rebuilding of the temple during the twelfth Dynasty, these slabs were all removed, and used as paving-stones. Thus they remained during the many centuries that have elapsed since they were laid until they were discovered last winter. Beyond the temple, to the east, was found, on the north side, the jamb of a door of approach of the time of Usertesen, and on the south side was discovered another of granite.

Three huge statues of Min, of prehistoric work, were found on the south side of the temple. The sculptures on these will be noted hereafter, but the plan indicates the position in which each of them was found. They are numbered 1, 2, and 3. Unfortunately, the exhibition does not contain any drawing of these statues, which have been retained by the authorities in Egypt. The head of one of them, however, is exhibited.

It is but natural to suppose that the occupation of the site by different temples in succession would leave relics of various periods, and this has been the case. The objects found, in reality, are of all ages from those of pre-historic date to fairly late Roman times. They consist not only of pottery but of monumental inscriptions of interest; statues, sculptured steles, and slabs, depicting scenes of temple worship; with a fairly good assemblage of the smaller articles, such as beads and other personal ornaments, generally found on Egyptian sites, so greatly prized by the explorer. Of architectural features there are comparatively few in the exhibition. What these are will be noted later. But the excavations laid bare what must have been originally a charming little chapel, the walls of which were covered with figure subjects and patterns in low relief, the site of which is noted on the plan. It may be well to state that of the objects found, the most important have been retained by the Egyptian Authorities for the Boulak Museum. Of these the principal are a fine group of three sitting figures, representing Ramessu II. between Isis and Nebhat. It is of red granite, 6 ft. by 5 ft. wide, and was found on the temple steps. Two scenes of Usertesen I. offering to goddesses, a long inscription of Antef V., a large granite stele of Ramessu III., &c., have also been retained, as well as the three statues of Min.

The objects found of prehistoric date, now visible, naturally claim our first attention. We shall see, by examining them, to what extent Dr. Petrie's primary object in undertaking the excavations has been rewarded. While they do not possess much to arrest attention at first sight, they are fraught with interest to the earnest inquirer. Here, in modern London, are what appear to be the earliest works that have yet been found in Egypt. One of these is the head of one of three colossal statues of Min. It stands at present under the portico of the University. In has no face, except a few indentations, which lead to the supposition that a wooden mask may have been fitted on to the face. The rest of the figure, and the other two, are kept back at Boulak. They show no sign whatever of chiselling, and their style is so archaic as to warrant the belief that they were worked with flint implements and afterwards smoothed to a fair face. Next is a bird of the same early work, found in the temple area, and also a lion, similar to two larger ones now at Boulak all found in the temple. The large lions were found lying on the lowest bed of clay met with, far below the stairs of the Ptolemaic period, showing conclusively that all these rude sculptures could not be of any later period, but that they must then have been old and useless material. All the later objects show traces of the mode of working, but there are none on these. On one of the glass cases upstairs are casts—unfortunately not the originals—of some outlined patterns of unusual interest. They are from the primitive statues already referred to. On one the elephant and the ostrich are dimly outlined in faint lines. These animals do not appear in any historical carvings. There are also indicated shells of the *pteroceras*, and saw fish, which belong to the Red Sea, "and the elephant points to a southern district."

Dr. Petrie has, in his little printed notice of these figures, some interesting remarks which may be as well transcribed. He says, in conclusion of his description:—"Hence the whole evidence, internal and external, points to these colossi, and the carvings on them, being long anterior to the rise of historical monuments. The close connexion of these with the Red Sea point to a time when the race was more in contact with their old home in Punt than with the newer home on the Nile. This suggests that these sculptures may well be even before the Memphite government of Menes, or even possibly before the Thinite dynasty, which preceded that. If the foregoing evidence holds good, these figures are as likely to be before 5000 B.C. as after that date." Thus surely and steadily—it may be that not in every case with exact accuracy—is the evidence of the extreme antiquity of man's appearance in the world accumulating.

Next in order of time are the sculptures of Antef V., who built a temple here. They consist of the thin slabs of limestone already referred to. Some of them have figures in relief, although the period is thus early, but

others are incised in the more usual way. They have evidently formed the casings to walls of sun-dried brick, similar to the manner in which similar material was faced at Nineveh. The position where they were found is shown on the plan. The sculptures are very fresh, and many of the slabs can be united.

Next in order of date, are sculptures of Amenemhat I. and Usertesen I., who rebuilt the temple. The granite jamb of the doorway has been discovered and it is on view. It is carved in slight intaglio with his names and titles. There is also a fine head of Osiris of this period.

These are followed in period of time by objects of the age of Tahutmes III., who again rebuilt the temple, followed by others of the Ramessides and of the Ptolemies, and these again by the later works of Roman date.

Some of the inscriptions found are of much interest, not only on account of the clearness of the lettering and the execution, but of the subjects recorded.

One of the most interesting of these in point of date, as well as its subject, is a long record of a Royal Commission sent to Koptos to depose the prince for treachery, and to instal a new family in his place. He and his descendants are driven from the place and their property confiscated. It is of the time of Antef V. A squeeze only is shown. There is a portion of a fine tablet, a hymn of praise of Ramessu II., an inscription of a Major Domo of Queen Arsinoe, who rebuilt the temple, and the dimensions are stated. There are also inscriptions of various later times. One in Greek is by the standard-bearer of the Palmyrene archers, Markos Aurelios Belkabos, dedicated to the great god Ierablo; another, also in Greek, recording the visit of the Emperor Quietus to Koptos; another, in Latin, setting forth the dedication of the bridge at Koptos in the time of Domitian.

It will be seen by the inscriptions and the sculptures that the rebuildings of the temple are frequently recorded. In addition, there is yet another setting forth that King Rahotep, of whom no monuments were previously known, rebuilt part of it. The ground plan indicates many of these rebuildings, and it would be a curious and not at all an impossible study, to identify the various periods of the work with fair exactness. But although the architectural features remaining are so few, the curious evidences of certain foundation deposits are very noteworthy. Dr. Petrie has already found similar ones elsewhere, and has established the fact of their existence in all buildings of importance. Here, the positions where they were found is marked on the plan. They were found in pits dug beneath the walls, and many articles of pottery were placed in each. As many as about two hundred were recovered from the largest pit. There were also a few alabaster vases. These were inscribed for Tahutmes III., beloved of Min, of Koptos. There were also models of corn-grinders, made of sandstone and inscribed in blue. In another pit ribbed beads were found; also bronze models of tools—chisels, knives, and axes. The angles of the Temple of Ptolemaic times also had their foundation deposits, consisting of specimens of pitch, alabaster, basalt, sandstone, copper and lead ores, and model mud bricks, plaques of red and other glass, bricks of lead and copper, a hollow silver case made on wood, and lastly, limestone blocks of small size, gilded.

The architectural details consist of a curious capital with twisted lobes, and a volute, said to be of Roman date, but possibly older, which has been painted in bright colours, red and yellow on a blue ground; a curious gargoyle or spout from a cornice of late date; several interesting examples of pierced limestone slabs to cover over the openings of windows, in much the same way as wood lattice-work is now used in Egypt; but the patterns are either simple slits placed side by side, or mere diagonal diamond work; one slab is, however, pierced to form a cross-like pattern, which an examination proves to be the Tau, the emblem of eternity.

The sculptured slabs exhibit many peculiarities of Egyptian work, one of the most interesting being that which represents Usertesen dancing before Min. He holds the *hap* and oar, and the figures, which are drawn with great precision, are executed in the usual style of Egyptian sunk work, with admirable care. Since this work may very safely be assigned to a period so remote as 2,600 years B.C., it is worthy of careful study as showing the condition of the arts at this remote period. It was found covered with stucco and used as old material in one of the later foundations. But a still more delicate piece of work, now placed close beside the above, is a part of a temple sculpture of Amenemhat I. It is in delicate low relief of the beginning of the twelfth dynasty. This, too, was found buried in fragments beneath later work.

Under the portico of the University is a large tablet of the architect of the Ramesseum, which represents Ramessu II. offering incense before the bark of Isis of Koptos, borne upon the priests' shoulders. One of the finest of the later works is a granite head of a Roman Emperor called Caracalla, and probably correctly so.

There is a large collection of pottery objects, for the most part of well-known and familiar types, of which a great many examples are from the curious Foundation deposits. There are many examples of Roman date, showing some instances of similarity with finds of the same age in Europe, with many interesting differences. But the most noteworthy objects are a few examples of very different nature to anything hitherto found in Egypt—about which Dr. Petrie has much to say. They were found in the centre of the oldest temple, and are formed by hand, of very coarse Nile mud, faced before baking with a polish of red hæmatite. Elsewhere are exhibited a large number of flint knives and flakes found in the town, lying upon the stratum of clay before referred to, and buried beneath 20 ft. of accumulated earth. In addition, there are ancient models of sacred tanks, altars, corn-grinders, and many other objects which hardly can be done justice to in a brief article.

The plan is published by Dr. Petrie's courtesy, and is copied from the drawing prepared by him, exhibited with the various objects.

NOTES.

WEEK after week passes without any settlement being arrived at in the Scotch coal strike. The bulk of the miners of that country have now been idle for upwards of eight weeks, and the loss of trade has been enormous. Shipments from all Scotch ports during last week were the smallest ever recorded—indeed, it is stated that for the last two months the Scotch coal exports show a decrease of over a million tons. There is the inevitable distress amongst the men and their unfortunate families, and it appears doubtful if the English miners will long continue their levy, which is raised, in some districts, with considerable difficulty. It would have appeared strange that no successful effort has been made to bring the disputants together, but that their national determination of character fully accounts for an unwavering attitude on both sides. Of course, efforts have not been wanting to bring the masters and men together. The Government are willing enough to give their assistance, but rightly hesitate to interfere prematurely. The President of the Board of Trade stated in the House of Commons on Saturday that confidential communications were passing between himself and the parties interested with a view to bringing about a settlement. It is satisfactory to note, in view of statements which have been freely made, that Mr. Bryce was able to assure the House that, so far as he knew, nothing had emanated from the masters amounting to a refusal on their part to meet the men, and that there was no reason to take a gloomy view of the position.

THERE is no doubt that the Wilson Tariff Bill, although it is far from being a Free Trade measure, does something towards lessening the heavy import duties in the United States. So far as it goes it will be of some assistance to the English manufacturers, and lessen in some measure the heavy cost of many articles to the inhabitants of the States. But after all it is a small step, and does not show any real tendency in the Americans to break away from the short-sighted policy of fiscal protection. The Tariff is so full of details that it is impossible to do more than give the general impression of it. By way of example in detail, however, the following facts may be stated:— Ornamented, glazed, painted, enamelled, vitrified, or decorated tiles will pay a duty of forty per cent., *ad valorem*, against forty-five per cent.; on cast-iron pipes of every description, the duty will be sixteenth of one cent. per pound, against nine-tenths of one cent. per pound. White lead and white paint and pigment containing lead, dry, or in pulp, or ground, or mixed with oil, will be charged a duty of one and a-half cents. per pound, as against three cents. per pound. The duty on steel rails is reduced from fifty-eight to thirty-five per cent., and on bars of rolled iron, from sixty-two to forty-five per cent. The existing duties, it will thus be seen, are still very substantial, and in many instances will be still practically prohibitive. Painters and sculptors, however, may fairly rejoice, since oil-paintings and water-colour drawings, and statuary, which are at present subject to a duty of fifteen per cent., will, in future, be admitted into the United States free of duty. We cannot doubt that the withdrawal of the duty will tend to brighten the prospects of English and French artists in their relations with the States.

THE award of honours to artists exhibiting at the Antwerp Exhibition has recently been published, and contains the names of comparatively few representatives of Great Britain. The members of the jury voting as guardians of the interests of British exhibitors were MM. Albrecht de Vriendt, Fernand Khnopff, Charles Ooms, and Henri Schaefels. Sir Frederic Leighton is *hors concours*, as having already obtained the highest distinction at the International Fine Art Exhibition of 1885; whilst the highest award, the medal of honour, is now received in the section of Painting by Mr. L. Alma Tadema, Sir John Millais, and Mr. Ouless. First-class medals are awarded for painting to Sir E. Burne-Jones, Henry W. B. Davis, and Henry Moore. Second-class medals are bestowed upon Mr. R. B. Nisbet for Painting, Mr. Thomas W. Cutler for Architecture, and Mr. D. Y. Cameron for Engraving.

AN old red-brick house at the north end of the west side of Fulwood's Rents, High Holborn, and abutting on Field-court, Gray's Inn, has, after the recent fire, just been dismantled, and will be pulled down. It is known that in the Rents stood "Squire's" coffee-house; Timbs, in his "Curiosities of London," identifies as being "Squire's" the house we cite, where, in Charles II.'s reign, Medbourne and Oates's Club used to meet, and whence many papers in the "Spectator" are dated. Fulwood's, commonly known as Fuller's, Rents, formed, long ago, the principal entrance into the Inn Gardens. It is named, it appears, after one Fulwood, to whom, by an order of Feb. 5, 1593,* the benchers paid 15*l.* "for a parcel of ground in Holborne for building a

* "Gray's Inn." By W. Ralph Douthwaite, Librarian 1886.

gate out of Gray's Inn into Holborne"; in the following year they laid out the present gateway in High Holborn and the roadway leading to it out of South-square, *olim* Holborn-court. The buildings formerly opened into Field-court, perhaps so called from the neighbouring Jockey's-fields, and, until 1697, had been a place of sanctuary, with, in later years, a Court of Requests for debts under forty shillings, for the Finsbury Division. Albeit of low repute at this day, Fulwood's Rents enjoyed some note in the eighteenth century; here were taverns and coffee-houses of good resort, including the "Golden Griffin," the "Castle" (at its east end), and "John's," one of the earliest of the coffee-houses; as also a punch-house, kept by Ned Ward, author of the "London Spy," who died there in 1731. In the British Museum are some water-colour drawings, made by Archer for his "Vestiges of Old London," of the interior of an early seventeenth-century gabled house on the east side, showing the oaken panelling of two rooms, one having carved beams on its ceiling, and a finely-carved mantelpiece, in oak, with arched niches and caryatides. The register of St. Andrew's, Holborn, records the burial, "out of Fulwood's Rents," on December 1, 1618, of Jane, sister of Christopher Fulwood, Esquire.

THE West India Docks, for which new entrances from the river at Blackwall have just been completed, were built in 1800-2 by Jessop, William Pitt laying the first stone. They are the first that were constructed in London, and were then the largest in the world. They consist of an import and an export dock, lying in the Isle of Dogs, with entrances from Limehouse and Blackwall Reaches. The East India Docks, lying to the north-east, were opened in 1808; thirty years afterwards the two companies became one. In 1869 a new entrance lock was made for the East India Docks, and two years ago the directors of the East and West India Dock and the London and St. Katharine Dock Companies, as united under the Act of 1888, decided to keep pace with the times, and to adapt the West India Docks, whose use had partially ceased, to recent progress in shipbuilding. Plans were accordingly made by Mr. Robert Carr for a new entrance lock into the Blackwall basin from the river, with new cuts from the basin to the two docks. As Mr. Carr unfortunately fell ill, he was appointed consultative engineer, and Mr. H. F. Donaldson was entrusted with the carrying out of the work. The new lock is 480 by 60 ft., with a uniform depth of 30 ft. over the sills. Messrs. Lucas & Aird contracted for the building operations; the pumping machinery being supplied by Messrs. Easton & Anderson, Limited, and the hydraulic machinery for moving the gates by Sir W. G. Armstrong, Mitchell, & Co. We are informed that the lock-gates were constructed by the Thames Iron Works and Shipbuilding Company, after Sir Alexander M. Rendel's designs; and it is stated that the original estimates of 200,000*l.* are not exceeded though some costly additions were made to the first plans, including further provision for the hardwood trade. The Millwall Docks, south of the West India Docks, were opened in 1868; in 1882, the East and West India Dock Company began the construction of the docks at Tilbury.

WE understand that the St. Pancras and Marylebone Vestries have agreed to share the cost of a sanitary improvement that should tend to a highly desirable object—the purification of the Regent's Canal. The St. Pancras Vestry will supervise the making of a new sewer for diverting the drainage of the Zoological Gardens from the canal into the main drainage system. Nash projected the canal when, in 1811, he planned Regent's (formerly Marylebone) Park, the engineer being James Morgan, who also laid out the park from Nash's designs. The canal passes for about nine miles from the Grand Junction Canal at Paddington to the Thames at Limehouse. Begun in October, 1812, it was opened to the river on August 1, 1820. It has two tunnels—beneath Maida Hill and Pentonville—twelve locks and a tidal lock, the total fall of the water-level being nearly 95 ft.

MR. C. W. WHALL has had on view at Powell's Glass Works during this week a pair of windows about to be fixed in the Church of St. Clement, Bournemouth, which will be well worth seeing by all who are interested in the right treatment of stained glass. The subjects, which were dictated to Mr. Whall, are the Resurrection and the Miraculous Draught of Fishes, and the treatment, as might be expected from so earnest and individual a worker as Mr. Whall, is distinctly original and far removed from the hackneyed methods too common in modern windows. As a starting-point, Mr. Whall has clearly regarded his work as decoration in translucent material, not as picture-painting on glass. Thus, in lieu of the conventional canopies of distorted and impossible architectural detail, the heads and bases of the windows are treated with an ornamental treatment, which, though suggestive of canopy work to some degree, is, strictly speaking, but flat decoration in neutral tones. Careful attention to lead lines and white glass, a rigid avoidance of anything resembling landscape, and a well-considered colour scheme go to make up an admirable attempt to get free from the trammels of conventionalism, and to produce a decorative result worthy of the fine church in which the work is to be placed.

IN Denmark a German company is busy turning the island of Fanoe into a bathing-place. The typical *Kŭrhaŭs* of the foreign watering-place has already been opened, and hotels are being erected. The *Kŭrhaŭs* type of building, besides containing a large ball-room, generally has a suite of reading and refreshment-rooms, and the great point in the planning seems to be its adaptability to large or small numbers of visitors, and the possibility of using it for all manner of purposes. It is supposed to combine the advantages of a social club, a mutual dining-room, a free library, and a theatre; and in wet weather it is turned into a children's play-room. A small entrance-fee makes it a paying concern. There seems to be a regular system in laying out a continental watering-place on German lines: an esplanade on the sea-front, a hotel quarter, hot baths, bazaars, a large public park inland, with playing-grounds, music-stands, *cafés*, &c. At Fanoe a Corso and Rotten Row are arranged for, and the lodging-house and villa quarters are kept severely distinct. The authorities retain the power to veto an ugly design (or what they consider such), as well as a bad construction; though when we consider what passes for picturesque in modern German villa architecture, one may fear that the æsthetic mercies of a watering-place under German management will be small indeed.

THE last word about Troy may possibly never be said, but in Dr. Dörpfeld's book just issued ("Troja, 1893,") we have probably the final official report of systematic excavations. The book in question is the necessary sequel of "Troja," and "Ilios," and in some respects of "Tiryns" and "Mycenæ. It contains a detailed account, with plans and illustrations, of the work carried on mainly at Mdme. Schliemann's expense during 1893; work carried out by Dr. Dörpfeld in memory of Dr. Schliemann. The programme planned and executed was fourfold:—1. To complete the investigation of the second stratum, especially with respect to the fortifications on the west and north; 2. To fix the order of the various strata by excavating vertically an untouched portion of the Acropolis, and noting with absolute accuracy the character of the objects in each stratum; 3. to investigate the tombs of the various strata with a view to noting the history of the development of the City of Troy; 4. Most important of all, to lay bare a large portion of the sixth stratum (counting upwards), being that stratum in which at the last excavation there were discovered, not only the remains of important buildings, but fragments of Mycenæ pottery. Dr. Dörpfeld was assisted throughout by Dr. Max Weigel (in the interests of pre-historic archæology), Herr Wilberg, as architect, Dr. Alfred Brückner, as general archæologist; while Dr. Brückner furnished a supplementary chapter on the graves investigated, and also one on Trojan ceramics.

SINCE Vienna has been transformed into a "Greater Vienna," the alteration of its Building Act of 1883 was only a question of time. Temporary amendments were at once made in 1890, and at the same time the authorities, with very good sense, invited the Vienna Society of Architects and Civil Engineers to frame the new Bill in accordance with the technical requirements of the day. The special committee in charge of this responsible duty has been at work for three years, and we understand that the results of its labours are being received with unanimous approval by all concerned. The proposed code is divided into four parts, with 963 clauses; but the whole of these are considered to be to the point, though in many cases novel, and probably constituting a substantial reform in building legislation. One of the principal difficulties has lain in the difference of requirements for different parts of the city, the area being divided into "zones."

OUR German contemporaries have already actually commenced describing the architectural exhibits of the Berlin *Salon*, which was opened in May. It appears that they are well satisfied with the quantity and quality of the work shown, and thoroughly appreciate the efforts of the new "Vereinigung Berliner Architekten," who managed to bring the drawings together, and get them well hung. Up to this time the Architectural Room at the Berlin *Salon* has been generally a farce, but this energetic society has taken the matter in hand, and has brought about a beneficial change. It is true that the drawings shown are not all freshly prepared for this exhibition, and that a number of old friends from competitions are on the walls. There is, however, already a noticeable improvement, especially as nearly all the leading German architects are among the exhibitors. Messrs. Ende & Boeckmann show some large business premises; Herr Wallot some interior views of his new Houses of Parliament, drawn by Messrs. Pfann and Rieth; Messrs. Cremer and Wolfenstein are represented by a design for a synagogue; Messrs. Bruno Schmitz, Otzen, Schwechten, Seeling, and Messel, of Berlin, as well as Herr Hauberisser, of Munich, Herr Eggert, of Wiesbaden, and Herr Schreiterer, of Cologne, have all sent drawings. Among the competition drawings which take a prominent position are several sets of designs for the proposed Provincial Museum at Berlin and the Town Hall at Elberfeld. Among the many church designs those for the Garrison Church at Dresden and the Memorial Church to the Emperor William at Berlin are the most important. Herr Seeling's model for the Rostock Theatre represents this class of work. We must congratulate the "Vereinigung," and hope next year's show will be a yet better one.

A LETTER of Messrs. Ende and Boeckmann, of Berlin, to our contemporary the *Deutsche Bauzeitung*, gives us some interesting particulars of the effects of the late earthquakes on the new public buildings these architects have erected at Tokio.

We refer to the earthquake that passed over Japan on June 20 last. It seems that the shock lasted no less than four minutes and fifty seconds, and that the buildings rolled perceptibly. Whilst all the other brick buildings suffered badly, Messrs. Ende and Boeckmann's blocks apparently withstood the shocks without showing a crack. This escape seems to have been mainly due to the precaution of tying in all the brickwork with iron bands, both horizontally and *vertically*, no part of the building being omitted; and, further, in building, the exterior slightly *inclined inwards*. The walls are built unusually thick. The designs purposely showed no gables, and in vaulting very narrow spans were arranged for. On referring to official information regarding the earthquake we hear that at Tokio and Yokohama together no less than 4,551 buildings were damaged, and that sixty-one persons were killed and 428 hurt by falling houses. Thirty-two buildings collapsed completely, and eighty-one were practically razed; five bridges gave way. Of course, the majority of these buildings were of native construction, but these, as usual, apparently withstood the shock far better than the average "European" structure.

THE death of Mr. Wyatt Papworth, after his brief tenure of the office of Curator to the Soane Museum, will be widely regretted. The appointment was one for which he was peculiarly fitted, and which it was hoped would afford him some years of comparative leisure in an honourable position, after his many years of arduous labour on the "Dictionary of Architecture." The latter work forms the chief monument of a career of useful and unostentatious study and labour; and while we could not help expressing our opinion, some time since, that the carrying on of such a work as the Dictionary ought to have been a matter of co-operation and division of labour, it must be admitted that as the work for the most part of one man, it is a most remarkable production, and wonderfully accurate in the main. Mr. Papworth was essentially a student, and possessed a mine of information on various curious and out-of-the-way departments of architectural history, and in this respect his place will not be easily supplied.

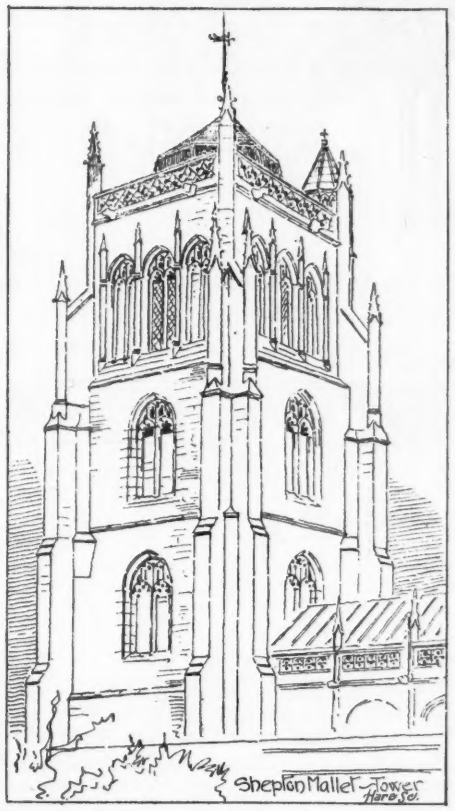
THE ARCHITECTURAL ASSOCIATION:

TWENTY-FIFTH ANNUAL EXCURSION.*

Wednesday.

A LONG drive through heavy showers of rain formed the first experience of the excursionists on this day on their journey to Mells, but further unrehearsed incidents were useful in relieving the tedium of the journey. The pole of one of the brakes was smashed a short distance from Wells, necessitating an irksome delay for the majority of the party. The minority went on, and, by spending some time at the little village of Stoke St. Michael, where there is a picturesque inn, reached the first stopping-place only a little before the second party. This was at Leigh-upon-Mendip, which, although not on the original programme, was well worthy of the time spent in examining and sketching the church of St. Giles, which, although small, with three-bay nave and aisles and chancel of considerable less height than the nave, has considerable interest. The western tower is of excellent design, even if not to be ranked in point of size with the first-class towers of Somerset, but resembling rather the type seen at Kingston and Huish Episcopi. The wooden roofs are good in form and detail, and old carved bench-ends and some ancient stained glass in the tower window add to the general interest. A very fine slab of Purbeck marble, exceptional both in size and beauty, forms the altar, having been discovered during some comparatively recent excavations under the north chancel aisle, where it is supposed to have been hidden.

Before reaching the village of Mells, a halt was made at the seat of the Horners, Mells Park, where the architecture of Sir John Soane was, to the visitors, of far less interest than the fine collection of works by Burne Jones and Rossetti—studies, oil-paintings, gesso, and embroidery, by the hands, or after the designs, of these great pre-Raphaelites, furnishing a treat to the excursionists, which came as a surprise to all, and a warning to those whom the external appearance of the house and a heavy shower almost induced to hurry away without the delay of entering. Arriving at length at Mells itself, luncheon was first disposed of, and a couple of hours was spent at the church and manor house, both altered for the worse since they were visited by members of the Association fifteen years ago.

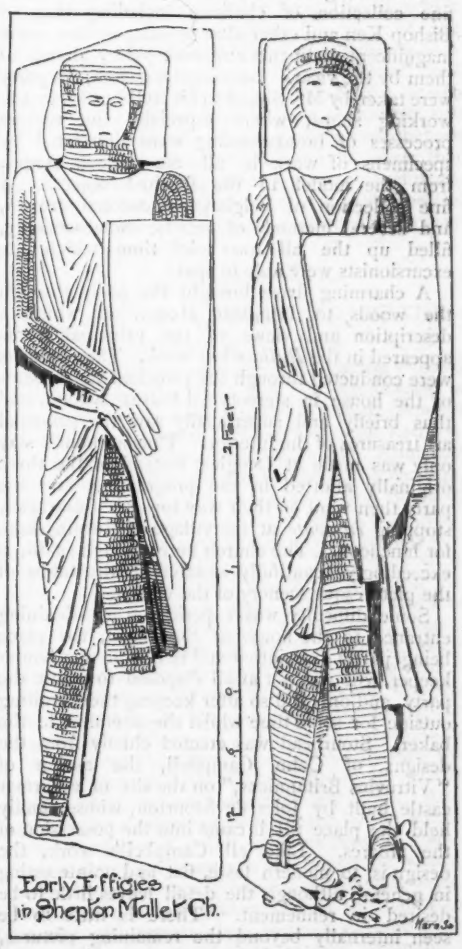


The church of St. Andrew has been most ruthlessly "restored," the beautiful oak pews of Charles I. date having been swept away, some stuck up in meaningless fashion against the walls, although judicious repair might have preserved them till the present time of their full appreciation, had not the Gothic iconoclasm of the rector wrought for ever the incalculable mischief which filled all those who had formerly seen the church unrestored with feelings which might have found unpleasant vent if the perpetrator of the vandalism had not departed to the far east to study Sanskrit. The manor house, as it now stands, though still picturesque and interesting as an example of Domestic work which an extant document of the reign of Henry VII. mentions as having been built "within the mind of man," possesses but a shadow of its former greatness. One wing only remains of the former H or E shaped plan, the remainder having been pulled down by a former owner about 150 years ago to furnish material for the building of stables to the great house in Mells Park. The existing portion has been greatly altered, and its original planning obliterated by successive alterations to fit it for a farmhouse, a boys' school and a rectory. The chimney corner in which "little Jack Horner" of nursery fame is said to have sat and pulled out the historical plum of 10,000*l.* still remains, but little else within the house is original. Mells has recently added to its attractions a real ghost story, a spectral funeral having been clearly seen by a local hard-headed Radical cobbler and two companions near the cross-roads traditionally known as St. Mary's grave.

On the return journey a halt was made at Shepton Mallet, with its picturesque market square and cross, the latter erected by Walter and Alice Buckland in the year 1500, but rebuilt within the present century. The original charter for the market was granted by Edward II. in the eleventh year of his reign, but the town is mentioned in Domesday with a reference to the pastures, from which the original name of Shepton was derived. The distinguishing appellation was borrowed from the Barons Mallet, lords of Shepton in the reigns of Henry I. and II. During the bloody Western assizes, after the Duke of Monmouth's rebellion, the town of Shepton Mallet suffered somewhat severely, thirteen of the inhabitants being convicted for their participation in that ill-fated enterprise. The church of SS. Peter and Paul, some sketches of corbels on the nave-piers of which appeared in the last issue of the *Builder*, is chiefly remarkable for its western tower, with the picturesque capping of unfinished spire and lead roof. Internally, interest is centred in the magnificent wooden ceiling of the nave, containing 350 panels, all of which vary in detail. The stone pulpit, of Late Fifteenth or Early Sixteenth century date, is worth noticing, with its introduction of Renaissance detail in Perpendicular work. The pews and choir-seats, recently carried out from the designs of the late J. D. Sedding, attracted considerable attention and some timid and halting criticism. Little heed was paid to the old Grammar School, situated northward of the church, though the original buildings of the establishment founded by Sir George Strode and others in 1639, have a simple picturesqueness that is not unworthy of study. A pleasant drive through the valley-road, by Croscombe, completed this day's proceedings.

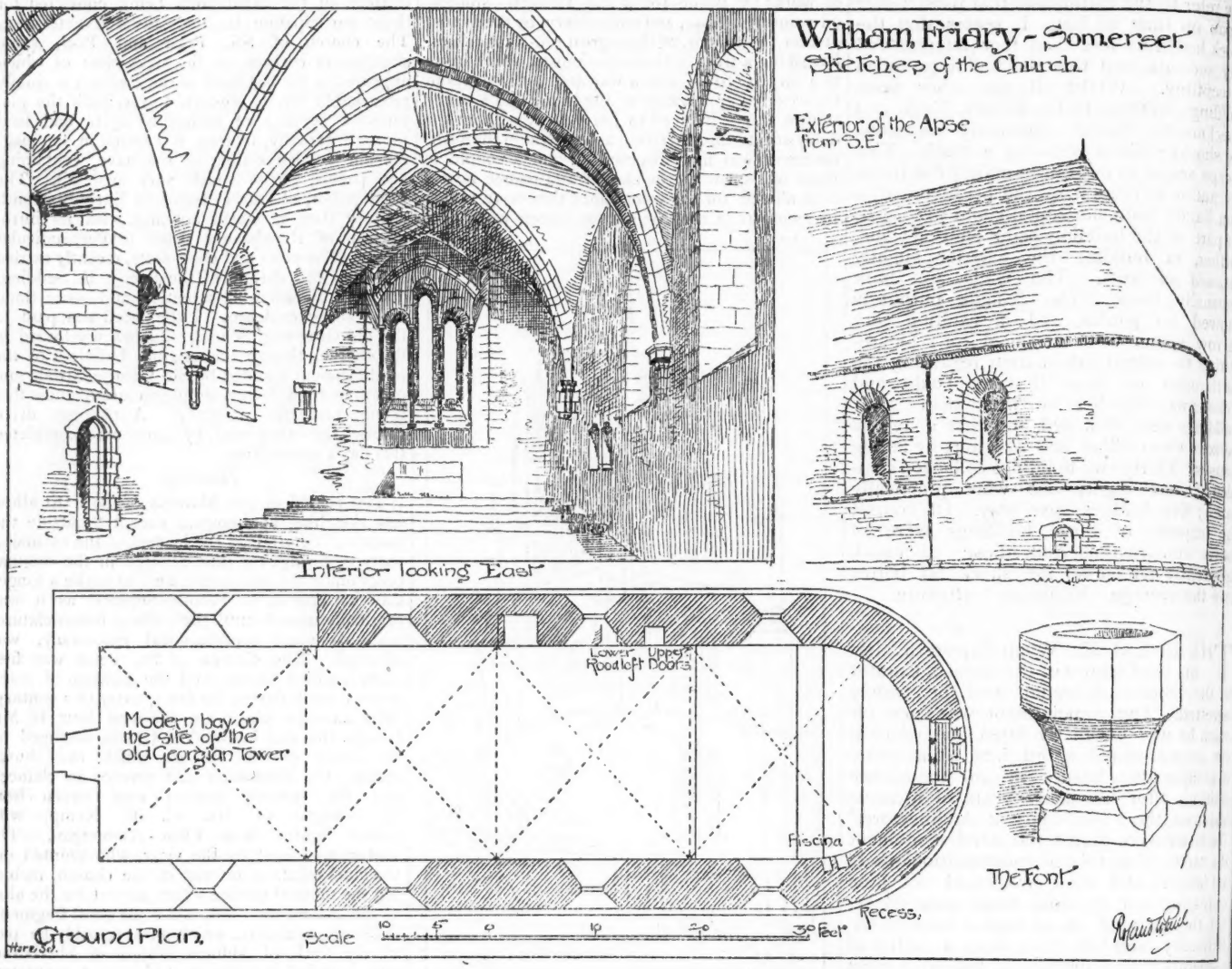
Thursday.

The refusal of the Marquis of Bath to allow any sketching at Longleat except "outside the gardens," determined the leaders of the excursion party to abridge the time allotted in the original programme to that house, and to make a longer stay at Frome, or Froome-Selwood as it was originally named until the railway nomenclature, with its usual topographical inaccuracy, was adopted. The Church of St. Peter was first visited, which has received the addition of much modern work during the last quarter of a century, chief amongst which are the west front by Mr. Gough, the well-known Via Crucis, arranged on the ascent of the hill on which the church stands, the decoration and reredos in chancel, and the recently-erected rood-screen from the designs of Mr. C. E. Kemp, with carved figures from Ober-Ammergau. The visitors were met by the vicar, who pointed out the chief points of interest in the church, including the unusual piscina which served for the altar of the ancient rood-loft, and some good fragments of Saxon sculpture, which may possibly be part of the work of Aldhem, Bishop of Sherborne, who founded the church and also a monastery dedicated to St. John Baptist in 705 A.D., the church of which remained to the twelfth century,



although the monastery was plundered by the Danes and the monks dispersed. The church is of further note as the burial place of Bishop Ken, whose curious wrought-iron grave monument is to be seen external to the east wall of the chancel, with

* Concluded from p. 115, *ante*.



a canopy of stone designed by Mr. Butterfield. The visitors greatly enjoyed the exhibition of the fine collection of chalices, including that of Bishop Ken and other altar vessels, as also some magnificent vestments and embroidery shown to them by the vicar. Leaving the church, the party were taken by Mr. Singer to his well-known metal-working shops, where especially the various processes of bronze-casting were illustrated by specimens of work in all the various stages, from the model to the finished object. A fine collection of Belgian processional crosses, and several methods of artistic metal-working, filled up the all-too-brief time which the excursionists were able to spare.

A charming drive brought the party through the woods to Longleat House, of which a description and views of the principal fronts appeared in the *Builder* last week. The members were conducted through the principal show-rooms of the house in stereotyped tourist fashion, and thus briefly and superficially saw the principal art treasures of the interior. Thus an hour's stay only was made at Longleat instead of the three originally allotted in the programme, and the party then went on their way towards Stourhead, stopping *en route* at the village of Horningsham for luncheon. The church here, though small, is exceedingly beautifully situated in the midst of the picturesque scenery of the village.

Some difficulty was experienced in obtaining entrance to the house at Stourhead, the place being partly dismantled and in charge of a house-keeper, who was not at all disposed to admit the party, and only did so after keeping them waiting outside for some time whilst she attended to the baker. Stourhead was erected chiefly from the designs of Colin Campbell, the author of "Vitruvius Britannicus," on the site of a former castle built by John de Stourton, whose family held the place till it came into the possession of the Hoares. Like all Campbell's work, the design is, to modern taste, flat and uninteresting in general, although the detail leaves little to be desired in refinement. There is little to be seen internally beyond the remaining pictures, and these are chiefly interesting as evidences of past taste in methods of drawing and painting.

Leaving the house without much regret, the party set off to walk to Alfred's tower, where it had been arranged that the conveyances should be again met. A short glimpse at the picturesque church, with its monuments to the Stourtons and Hoares, and a glance at the beautiful High Cross of Bristol, which has been removed from that city to this quiet village, and the excursionists proceeded through the woods and pleasure-grounds of Stourton or Stourhead, giving scant attention to the grottoes and temples with the prospect of a train to be caught and half-an-hour to walk a good couple of miles up Kingsettle Hill, the scene of several memorable contests in early English history; for here in 656 A.D., Cenwalh, King of the West Saxons, encountered an army of the Britons, whom he defeated with great slaughter and compelled to retreat to Petherton. In 1001, an obstinate and sanguinary battle was fought between the Danes and the Saxons under the command of Cola and Edsigus, in which the latter were defeated, and in 1016 another engagement took place between the Danes, under Canute and Edmund Ironside, when the Danes in their turn were the vanquished. Thus through these early battle-fields, the excursionists hurried on to the trysting-place where Alfred's Tower marks the spot on the summit of Kingsettle Hill, where in A.D. 879 that King, issuing from his retreat in the isle of Athelney, erected his standard and gathered his forces for his successful battle against the Danes at Edington. So the excursionists, after their battle against time and hills, gathered again on Kingsettle Hill, and joined the brakes for a mad rush to Witham Station, which, and the train, were successfully captured, and Wells once more safely reached after a day rich in beautiful scenery, though somewhat void of architectural interest.

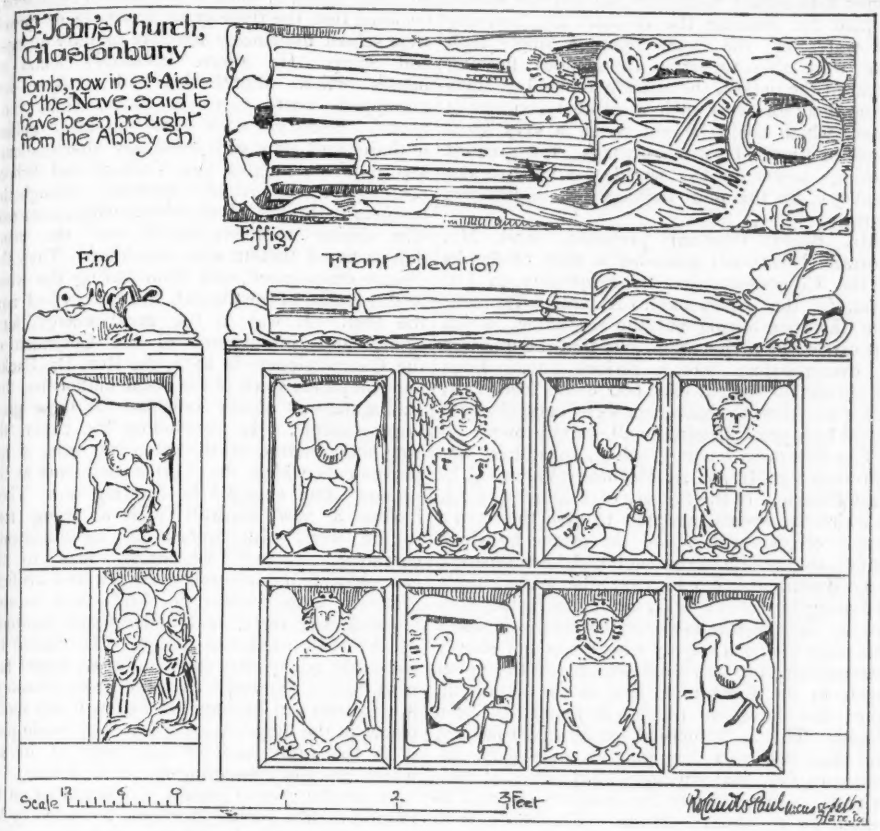
Friday.

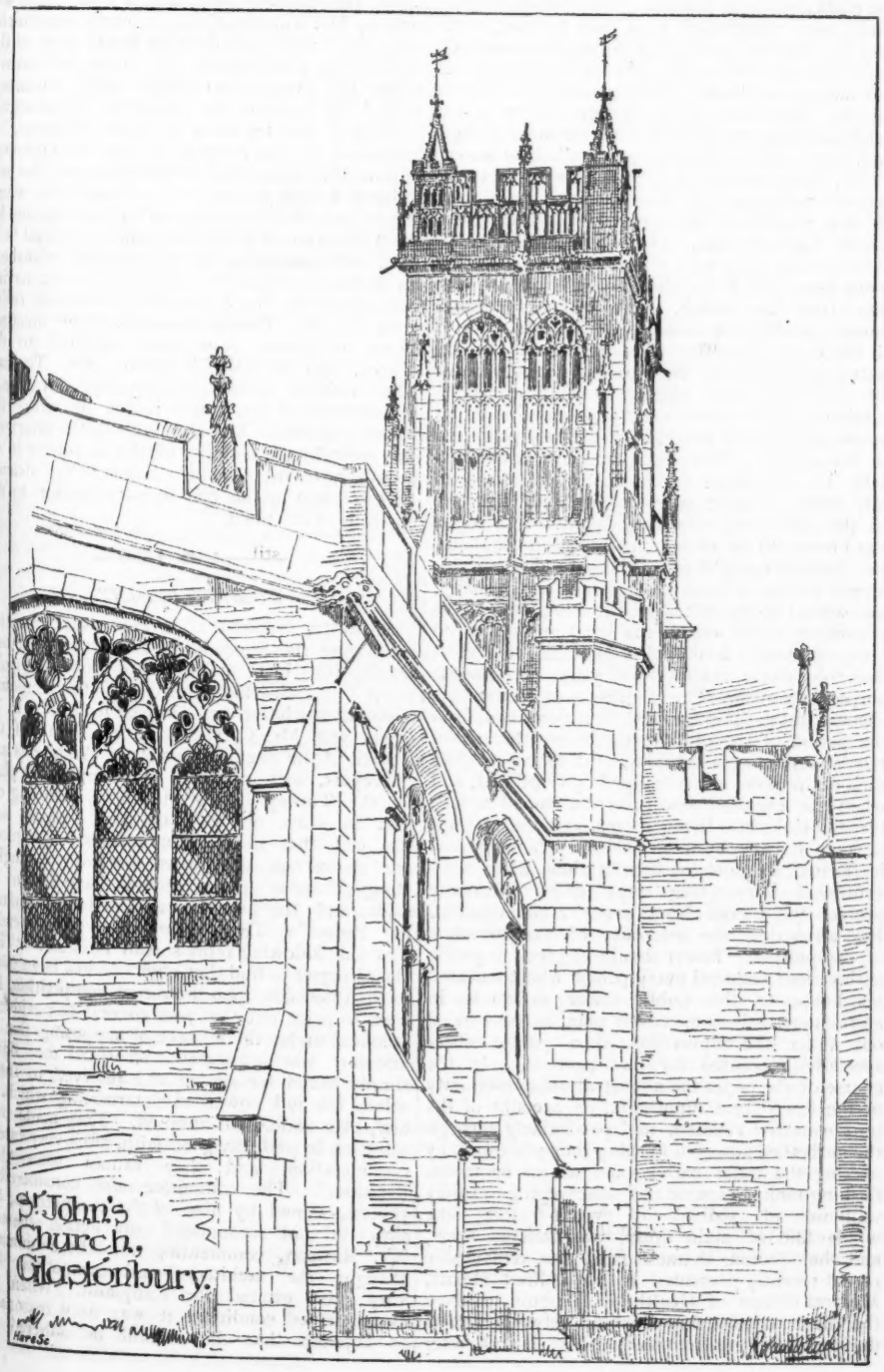
After some delay to allow of the photographers of the party taking their groups, the excursionists started for Pilton, where the Church of St. Mary, though much "restored," is still of considerable interest, both in itself and from the picturesque situation in which it stands. The two-storied arrangement of windows in the nave and chancel is peculiar, and its origin curious. There is one aisle only to the north, and the nave arcade has a range of clearstory windows as a matter of course. To match these the designer put a similar range of windows in the south side of nave, and then follows naturally a lower range, and the nave is two-storied. The chancel follows suit, and so is evolved the peculiarity, quite unconnected with any idea of two floors. The screen in the north aisle is one of those instances of the use of Renaissance detail in Perpendicular work, undoubtedly due, not to subsequent alterations or additions, but to the employment of some of the foreign carvers, who came over here from Italy in the reign of Henry VII. Some portions of ancient embroidered vestments are preserved in the church, and were exhibited to the visitors. The barn built here by the Abbots of Glastonbury attracted much attention, and still remains in useable condition. It is similar in form to the barn at Glastonbury illustrated by us last week, and its detail is rich and good.

From Pilton the excursionists went on to Evercreech, where there is little beyond the market cross and the magnificent tower, but this latter is worth going many miles to see, for, as may be seen from Mr. Mitchell's sketch in our last issue, it is, if not the very finest, at least among the finest examples of its type. It is 20 ft. square on plan at base, and its height is variously given at 130 to 135 ft.

During their stay at Evercreech, some of the members took the opportunity of seeing in progress the modelling of Mr. Bates' statue of General Roberts.

After Evercreech, the party finished up the day's work at Bruton, a quaint and picturesque town, full of bits for the sketcher. The old houses, the remarkable series of wrought-iron inn signs, and the medley of roofs and buildings, rising from the banks of the Brue which runs through the town, provide an amplitude of subjects almost sufficient to keep one away from the church, interesting as this is, with its western tower, and also a second tower in the unusual position, shown in our illustrations last week, over the north porch. The church of St. Mary has an ancient monastic history, a Benedictine Abbey having been founded by Algar, Earl of Cornwall, in 1005, which was succeeded after the Conquest by a priory of Augustinian canons founded by William de Mohun in the reign of King Stephen. The tower is supposed to have been built from the benefactions of a mercer of Bruton, the father of Prior Hampton, who gave an equivalent of 5,000*l.* to the church in 1428. The church


St. John's Church, Glastonbury
Tomb, now in S. Aisle of the Nave, said to have been brought from the Abbey Ch
Effigy
End
Front Elevation
Scale 12 6 0 1 2 3 Feet



was, it is said, built about 1450—of course, on the site of the older priory church, as the crypt, into which some of the members descended, shows Transitional Norman work, and is undoubtedly part of the church built by William de Mohun. The chancel, ceiling, and the altar-screen are remarkable specimens of plaster decoration of the date 1720 A.D., and certainly indicate foreign, probably French, workmanship. From the position of remains of stairs there seem to have been two rood-screens in the church, but both have vanished. The old "hospital" or almshouse, founded about 1618, by Hugh Saxey, auditor to the household of Queen Elizabeth and James I., and the buildings of which were completed about 1636, and are built around a quadrangle, is now less interesting than formerly on account of modern "restorations" and improvements, but it still retains enough of its old charm to justify a visit. The return to Wells was made by way of Shepton Mallet and Croscombe.

Friday evening being the last on which the excursionists were gathered together, the committee for the next year was, as usual, elected after dinner, when Mr. H. D. Searles-Wood, who has for many years acted as hon. secretary to the excursion, expressed his desire to be relieved from the duties, in consequence of the increase of other calls upon his time. The idea of losing their genial, hard-working, and experienced secretary naturally did not commend itself to the excursionists, and it was accordingly, on the suggestion of Mr. Albert Murray, arranged that, instead of retiring, Mr. Searles-Wood should have the assistance of a colleague; and Mr. W. Talbot Brown, of Wellingborough, one of the oldest and most regular members of the excursion, was unanimously elected as joint-secretary with Mr. Searles-Wood. A better arrangement could scarcely be devised, as the qualifications of the two gentlemen now elected joint-secretaries form a combination of abilities which it would be impossible to find in any other two members.

Saturday.

The last morning of the excursion found a slightly-reduced number of the members driving to Glastonbury to complete the programme of the excursion by visiting and studying the remains of the famous Abbey, which forms No. 3 of the *Builder* series of "Abbeys of Great Britain," and which was fully described and illustrated in our issue of the 4th instant. The ruins of the Abbey churches, the abbot's kitchen, and the tithe barn were visited, as were also, by some of the members, the George Inn, the Abbey court-house, usually known as the Tribunal, and the parish churches of St. Benedict, a sketch of the tower of which we gave last week, and St. John the Baptist, the latter with a tower whose outline is considerably less graceful than that of the former. Thus ended a pleasant excursion, not too full of work, but very enjoyable for the beautiful scenery, and fairly fortunate in the matter of weather.

SANITARY INSPECTORS' ASSOCIATION:

ANNUAL CONFERENCE.

THE members of this Association visited Ramsgate on the 17th inst., in acceptance of an invitation to hold there the annual summer Conference, forwarded to Sir Benjamin Richardson by the Mayor of Ramsgate (Mr. Alderman Blackburn). The President, Sir B. Richardson, was detained in Paris, his place being taken by Mr. Thomas, the Chairman of the Council, supported by Mr. H. Alexander (ex-chairman), Mr. Raymond (treasurer), Mr. S. C. Legg (hon. sec.), Mr. Tidman, C.E., Mr. Woonton, Mr. Dee, Mr. Fairchild, &c., and a large number of affiliated members from Liverpool, Manchester, Leeds, Bristol, Stafford, Merthyr Tydfil, Reading, Maidstone, and other provincial centres. The visitors were received on arrival by the Mayor, who was accompanied by Mr. Alderman Emmett, Mr. Seebag Montefiore, J.P., Mr. W. A. Valon, C.E., the Borough Engineer, and the Conference was at once constituted in the large room of the Royal Hotel, which was completely filled. After a cordial welcome had been offered by the Mayor, Mr. Thomas was called upon to preside. After complimenting Ramsgate, to which he was no stranger, on the great natural advantages which rendered it, in his opinion, one of the healthiest of all health resorts, the Chairman referred to the insecurity of tenure of office, of which the majority of sanitary inspectors had to complain. All honest and capable men should have security of tenure in their offices, should not be subjected to be reprimanded or suspended for declaring un-

pleasant truths, and should not be removable except with the consent of the Local Government Board. They had a good inspector at Ramsgate (Mr. Millard), whose worthiness was completely recognised by his Corporation, and they would never dream of removing him for fearlessly exposing any evil, but it was not so with the majority of inspectors in London and in many provincial centres.

The Medical Officer of Health, Dr. T. G. Styan, had forwarded from Baden-Baden an interesting paper to Alderman Emmett, the Chairman of the Sanitary Committee, who was now called upon to read it. Ramsgate had learned enough of the value and necessity of good sanitation, said the Medical Officer of Health, to make it welcome cordially the visit of the Sanitary Inspectors' Association, the members of which he hailed as "comrades-in-arms." They had met together in various inland centres of industry and business, but in a seaside town like Ramsgate, they would find the conditions totally different. The authorities had two populations to provide for, one resident and fairly constant in number, the other a floating population as changeable as the weather. Fine weather brought them suddenly in great numbers, and a week's rain would send them as suddenly away again. In the winter months and the greater part of the year the town had only a population of 25,000, but in July and August one of 50,000. If they imagined London with 4,306,000 in December and 8,612,000 in July they might realise some of the difficulties of Ramsgate. A supply of water more than sufficient for the smaller population might be totally inadequate for the larger one, and the drainage and means of removing street refuse would be similarly deficient, unless very special arrangements were devised to meet the difficulty. Another special difficulty was the constant danger they had to run from the importation of infectious disease, and he regretted to say it was at times consciously imported. Two years ago, when scarlet fever was rife in London, thirteen distinct importations of the disease had been traced in five weeks, and there was reason to believe that other health resorts, within easy distance of London, were equally unfortunate. Isolation in infectious cases was so expensive in a seaside town as to be almost impracticable, unless the patient was willing to go to the town hospital, which was seldom the case; but as a rule the friends of patients preferred to send them to their homes, and that could be done by means of ambulances, which were carried on trucks. The overcrowding difficulty was an embarrassing one, and it was not among the humblest visitors that the evil most prevailed. Well-to-do persons would hire one or two rooms for a large party, and on the supposition that they would only be occupied for sleeping purposes, as many persons as possible were crowded into each room, with the result that in wet weather the rooms were dangerously overcrowded for many hours at a stretch. The residents, too, anxious to make the most of their houses during the season, often crowded into a single room—not unfrequently a cellar below ground—and the practice constituted a serious danger to the public health. Another difficulty was the tendency to exaggeration, through which the occurrence of one or two cases was magnified by rumour into the outbreak of a dangerous epidemic. Not long ago it was alleged that an epidemic of diphtheria had broken out in the town, when at that very time there was not a single case of diphtheria throughout the Isle of Thanet, and when the zymotic death-rate of the previous quarter was only 0·7 per 1,000. It was only the natural advantages of situation possessed by Ramsgate that enabled the authorities to contend successfully with all their difficulties. The drains had a natural fall which permitted of the sewage being carried by gravitation well into the strong tideway, to disappear promptly in the Channel. They had pure air on every side, coming laden with ozone fresh from the sea, and from the land side unspotted by the noxious fumes of factories. They had close to the town an abundant source of water supply from the chalk, supplying water whose purity was above suspicion; and they had the advantage—not a small one—of municipal authorities acting always together in the most cordial spirit. The sanitary inspector's share of the work was particularly difficult and important, and it required the exercise of much tact and patience as well as experience. The visit of the Sanitary Inspectors' Association to Ramsgate that day could not fail to further cement the good feeling already existing between the various officers of the borough and the members of the Corporation.

The Mayor supplemented the paper by a few figures with regard to the outfall and the means adopted for flushing the drains. By lowering the water of the inner basin a single inch they were able to get a tremendous flushing power at the outfall, the surface of twelve acres giving them for every inch in depth 1,200 tons of water, which could be put on in a very short space of time. It was, perhaps, the greatest flushing power in the world. They had not spent 50*l.* on the new drainage system in seven years.

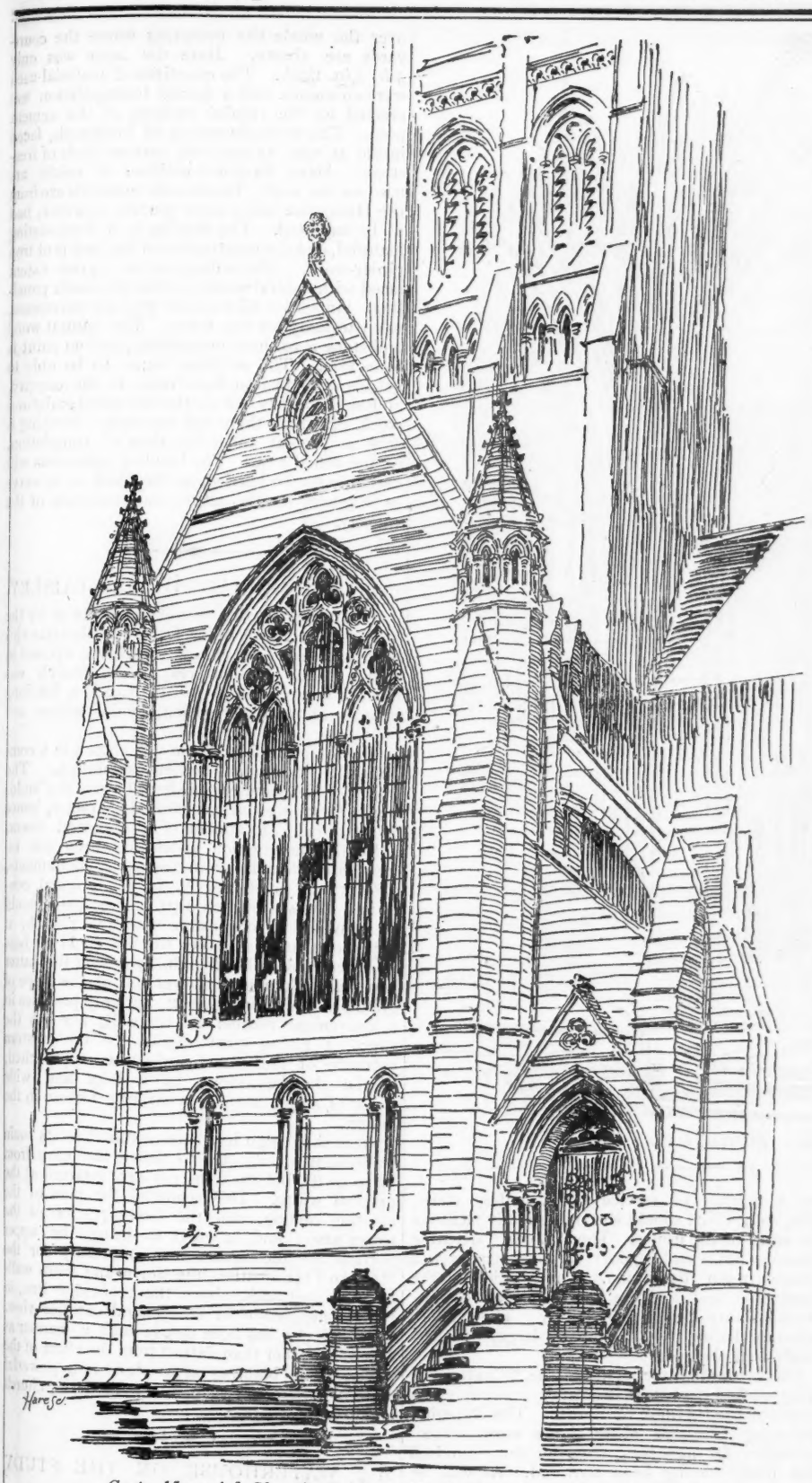
Mr. Bland (Barton) proposed, and Mr. Worrall (Liverpool) seconded a vote of thanks to the Corporation for its hospitality, to Dr. Styan for the paper, and to Alderman Emmett. The Chairman having put the resolution, which was carried by acclamation, said that the question of overcrowding was a serious one. Each person should have at least 600 cubic feet of air, and if a by-law to that effect were compulsory it would be a great blessing to all seaport towns.

The Alderman having replied, an address was delivered by Mr. W. A. McIntosh Valon, C.E. (past President of the Society of Engineers, &c.), in which the system adopted to give the town a supply of good water, and the means by which an effective system of drainage had been secured, were described. Up to 1877, the water supply of Ramsgate was in a by no means satisfactory condition, the company in whose hands the business was, only giving a supply which was not simply intermittent, but was unable to reach the upper levels in the town until late in the afternoon, when the valves in the lower mains had been closed. This crude method was so unsatisfactory, and must prove so dangerous in case of an outbreak of fire, that the local authorities at last, in 1877, resolved to buy the company out and to hasten on a constant supply. The headings in the chalk, which at that time only extended to 600 yards, were lengthened from time to time, until they had reached nearly two miles, the surrounding district as well as the town itself obtaining by this means the blessing of a constant and efficient supply. They had built at the highest point in the neighbourhood a tower 60 ft. high surmounted by a tank capable of holding 250,000 gallons of water, which, being connected up to a pumping-station, and, when necessary, to the lower level mains, had given a remarkable immunity to the town from serious losses by fire. One or two well-drilled firemen were able, with a hand-barrow, a flexible screw hose, and a hydrant key, to subdue in a short time fires which, under ordinary circumstances, would have caused great mischief. With all the costly apparatus necessary in the London system of divisional fire-stations, not a tithe of the efficiency was obtainable that could be obtained from a common cast-iron main, under an unvarying head of water, such as they possessed at Ramsgate. This high pressure, combined with the abundance of the supply, furnished an easy means of effectually flushing and cleansing all the main and subsidiary drains. The water was known to be among the purest in England, and Ramsgate might fairly claim to have a water supply which, in point of excellence and quantity, was second to no other in the kingdom. This abundance would enable the local authorities to carry out, under favourable conditions, that most desirable reform, the supply of water for domestic purposes by meter. The progressive improvements effected in the drainage were next described, from the period of the old cesspit, before the earlier tubular drains were introduced at Dover; before such drains were either trapped or ventilated, and when the enclosed sewer-gas still forced its way through sinks into living rooms, and the attempt to keep it back by water-sealed syphons proved ineffectual, down to the present time, when well-ventilated intercepting traps more effectually protect the houses from sewer contamination. He advocated the adoption of the principle of compulsion. Power should be given to public authorities to compel every person who connected his house to the public sewer to do so in accordance with an approved plan, to be carried out under the supervision of a public officer specially appointed for that purpose. In the course of the paper the almost absolute immunity of the town from diphtheria, on account of the improvements realised, and particularly through the unrivalled power of flushing they possessed, by making the inner harbour act as an enormous flushing-tank, capable of discharging rapidly millions of gallons of water along the whole line of main drain, was insisted upon, and he quoted extracts from the remarkable report recently presented by Mr. Alfred Harris, Medical Officer of Health of Islington, to show the direct relationship existing between perfect drainage and this immunity. Mr. Harris, after an examination of some 1,300 cases of diphtheria, declared that the three great factors in its spread were school influences, defective sanitary fittings, and damp. He almost invariably found in houses where diphtheria had broken out untrapped waste-pipes to sinks, sinks connected directly with the drains, gullies in drains and other such insanitary abominations. Up to fifteen months ago Yerbury-road School possessed an unenviable notoriety through the frequent outbreaks of diphtheria which occurred. The drains were overhauled, and the many defects found therein were remedied. Then the disease disappeared, and from having the worst health record of the district, this school had now the best. It was to the great energy, foresight, and intelligence of the Chairman of the Commissioners in 1876, the Rev. Dr. Banks, and the public spirit of the local authorities, that Ramsgate was chiefly indebted for these great improvements. In concluding his paper, the Engineer referred to the extensive series of improvements which the Corporation was at the present time engaged in carrying out. These include a new sea-wall with a rising road to the west, with arches of an ornamental character, a new serpentine road to the east, having ornamental rockwork and artificial grottoes, with clusters of shrubs and recesses for sheltered seats, and underground lavatories of the most improved design. He trusted the visitors in going away from Ramsgate would take with them a conviction that the great advantages it possesses can be equalled by few if any similar places in the kingdom, and that they would place it in the front rank of all towns of its sort which are now competing for public favour.

A cordial vote of thanks was accorded on the motion of Mr. Jones (Merthyr), seconded by Mr. Clark (Broadstairs), and then a short paper was read by Mr. Tidman, C.E., in which some useful suggestions with regard to the future work of the Association were made. The time had arrived when the Association might with advantage extend the scope of its operations by arranging courses of lectures of a practical character, by increasing its membership, by the establishment of a monthly journal of proceedings, and the provision of a headquarters for the Association, which should include not only rooms for meetings and for the transaction of committee and secretarial business, but class-rooms, laboratories, and workshops for technical education. A vote of thanks having been accorded, Mr. Seebag Montefiore was called upon by Mr. Thomas to address the meeting. Votes of thanks were also accorded to the Mayor, and to the Chairman, Mr. Thomas. The visitors were subsequently entertained at luncheon at the Royal Hotel, at which the Mayor presided. The remainder of the afternoon was spent by the majority of the members in an excursion to the Goodwin Sands in the steamer *Cynthia*, and by the rest in an excursion to the environs of the town.

COMPETITIONS.

Schools, Sheffield.—The usual monthly meeting of the Sheffield School Board was held on the 16th inst., in the board-room, Leopold-street. At the last meeting of the Buildings Committee a letter was received from Mr. E. M. Gibbs and Mr. C. Hadfield, on behalf of the council of the Sheffield Society of Architects and Surveyors, with reference to competitive plans for the Tinsley Park-road school, pointing out that in view of the assessors' report and the fact that only three infants' class-rooms are shown on the plans marked "Sanglier Rouge," those plans should have been set aside, and the first place awarded to "Multum in Parvo." The committee recommended that the following reply should be sent:—"The Board regret to find that objection has been taken to their decision upon the recent competition, but I am to point out that your council has evidently laboured under the mistake of supposing that an assessor was appointed, whereas the Board simply asked for advice and reserved to themselves the full power of determining which, if any, plan should be adopted. They made their selection in perfectly good faith, after very careful consideration, and they cannot alter their decision." The committee also considered a protest, signed by nine of the competitors, but they did not recommend any action thereon. Mr. Rawson, commenting on these minutes, thought the architects and competitors had very good ground for complaint. When the Board issued conditions it was only reasonable to suppose that they would be adhered to.



Coats Memorial Church, Paisley: North Transept. *(See page 134.)*

The chairman said he very much regretted that the architects had felt it necessary to make a protest, because there was not the least desire on the part of the board to do anything unfair. The committee were no doubt influenced by Mr. Robson's report, but they acted on their own responsibility, and were perfectly unanimous in selecting the plans marked "Sanglier Rouge." He saw no advantage in reversing the decision. The Rev. H. J. Shaw said that in the conditions the word "must" was sometimes used, and sometimes the word was "should." In future it would be well to divide the conditions into those that were obligatory and those that were merely suggestive. An expression of regret was due to the unsuccessful competitors. The board, however, could not go back on their decision, because they might then be doing a greater injustice to the successful competitors. The minutes were ultimately passed.

NEW CENTRAL HIGHER GRADE SCHOOL, BOLTON.—At a recent meeting of the School Buildings and Sites Committee of the Bolton School Board, the award of the assessor in connexion with the plans for the New Central Higher Grade Board School was considered. It had previously been decided by the Board that the competition should be confined to local architects, and seven firms sent in plans, for which premiums of 50*l.*, 25*l.*, and 10*l.* were offered, the first to be merged in the commission of the successful architect, in the event of the Board accepting his designs. The assessor appointed was Mr. E. R. Robson, F.S.A., of Westminster, consulting architect to the Education Department, who made his award as follows:—1. Mr. R. Knill Freeman, F.R.I.B.A. (under the motto of "Lux"); 2. Mr. J. Simpson; and 3. Messrs. Woodhouse & Potts. At a meeting of the Board since held, this award has been confirmed, and the carrying out of the work entrusted to Mr. Freeman. The building is to be of four stories, and the style is Renaissance. The estimated cost of the work is 20,000*l.*

*** WE cannot accept any statements of the result of competitions except from public announcements or from official communications.

Illustrations.

BUDAPEST HOUSES OF PARLIAMENT.

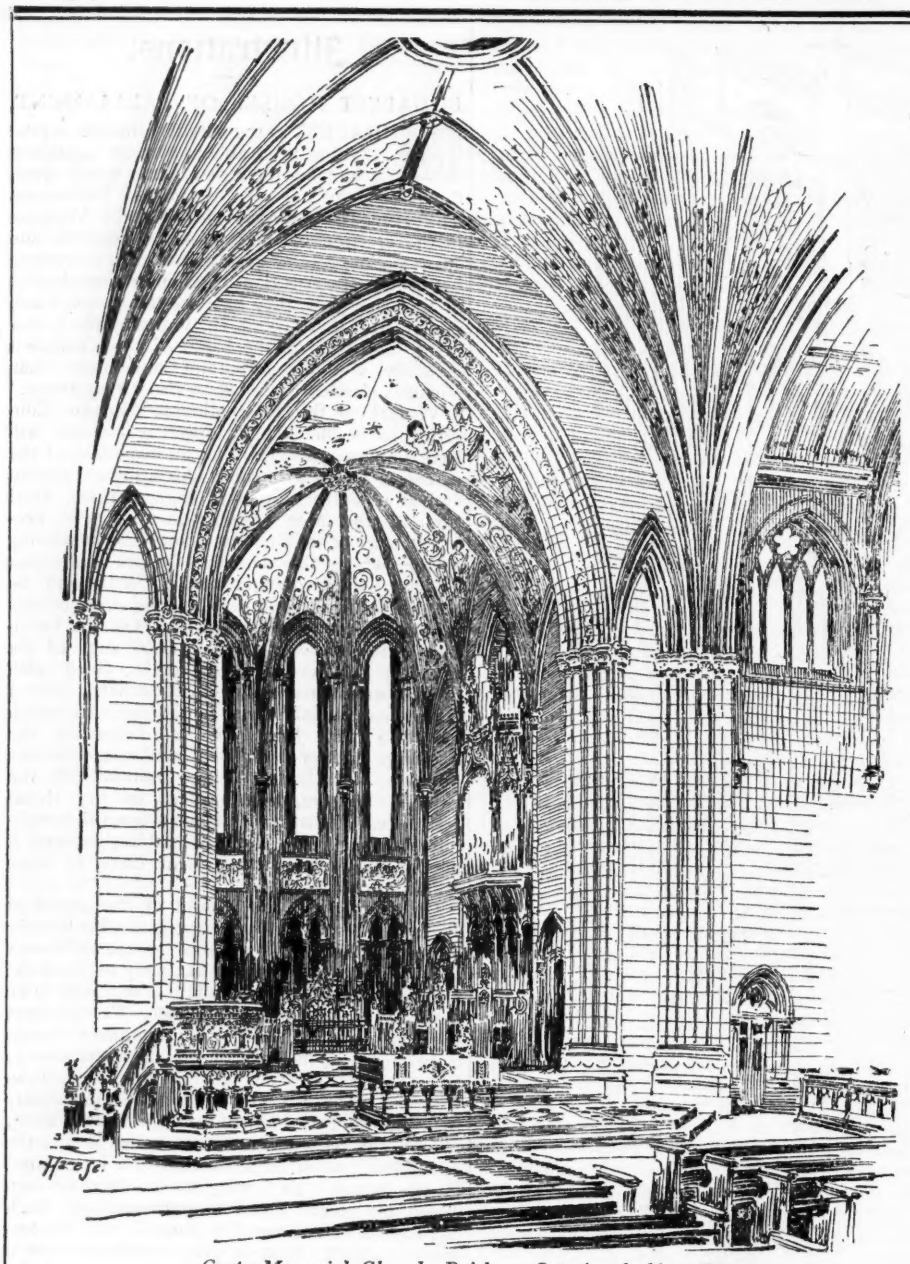
BUDAPEST is the only Continental capital that has been able to give its legislators a site for their new home which rivals the position of our own Houses of Parliament. The Hungarians always vie with the Viennese in the erection of their public monuments, and spare no expense to give their capital something better than the Austrians. As far as the selection of this site goes, they have certainly succeeded, and if size alone count, the imposing block now being roofed in on the banks of the Danube is certainly a more important monument than Vienna's classical building on the "Ringstrasse."

Visitors to the International Hygienic Congress, to be held at Budapest next week, will have ample opportunities for an inspection of the extensive works on which the army of masons and stone-carvers are still engaged; and Herr Steindl, the able architect-in-chief, will probably also be willing to show his interesting *atelier*, where the modeller is practically just as busy as the draughtsman. There will be ample facilities afforded to the Congressists for appreciating the unique aspect of the building, which on one side overlooks one of the broadest reaches of the Danube, lined with fine embankments; whilst on the other it faces a large square which serves as the main approach from the city. Just above and below the site two large bridges cross the Danube, and on the opposite bank is the rising ground, with the palaces, terraces, and gardens of the Royal residence. The square has several main thoroughfares opening into it, and the buildings around it are of the five-story tenement class, of some architectural pretension.

Contrasting with the Houses of Parliament at Berlin and Bern, which were described in the *Builder* of January and April respectively, the architect's "programme" in this case distinctly required the House of Deputies and the House of Lords to be treated as if of identical importance. Though there is a considerable difference in the number of seats to be provided, the two council chambers were to be equal in size, and equally conspicuous from without. The "Lords" wing was practically to be the exact *facsimile* of the "Commons" wing, though the requirements were by no means the same, and less office accommodation is required for the former. Each wing was to have its own *foyer*, of exactly equal importance, and both were to be extensions of a central *salle des pas-perdus*, which, with a grand staircase and a prominent cupola, was to mark the unison of the two bodies and the centralisation of authority. The idea of this portion of the plan seems to have been suggested by the plan of our own Houses of Parliament. With his "programme" so distinctly defined, the architect, even if he had wished it, could have but little scope for picturesque grouping. A symmetrical plan was essential, and one may perhaps regret that a subject which lent itself so distinctly to classical treatment should have been treated in a Mediæval style, where too precise a symmetry is out of place. Why the Mediæval style was selected we do not know. The Hungarian admiration for everything English may have had something to do with it, or possibly the mere dislike to have anything in common with Vienna.

The Budapest central *salle des pas-perdus* is a rotunda on the first or main floor. The grand staircase by which it is approached has its vestibule in a line with it, facing the square. The staircase is curiously planned. Leaving the vestibule a single broad flight takes the visitor to a landing from which it again starts, but this time accompanied on either side by narrow flights. These three lead to the cupola. From the landing level two narrow flights, however, also return on either side of the first-mentioned flight and lead to a large committee-room, with its *foyer* situated above the vestibule. The result is that when leaving the cupola there are three parallel flights at the disposal of the visitor to take him half-way down, and then he must enter the single well. This neither looks beautiful, nor is it good planning. If anything, an exit should get broader, not narrower.

The *salle aes pas-perdus*, as indicated above, distinctly separates the two wings, which have their own *foyers* on the centre-line running parallel to the Danube. Common to both wings is a suite of reception and refreshment-rooms, which take up the central position on the river front. This, we believe, is the only case where both "Houses" of a legislative institution have a mutual department of this kind. Common to



Coats Memorial Church, Paisley: Interior, looking East.

both divisions are also a number of offices facing the square, to which passage access is gained by the head of the grand staircase.

The plan shows the general contents and arrangement of the building. The Ministers seem to be exceptionally well cared for, the dimensions of their studies being almost extravagant. The refreshment and reception rooms, common to both houses, are faced by a magnificent *loggia*. English Members of Parliament would, however, scarcely appreciate the planning of this section. The approaches are not good enough, and the lavatories are badly placed and insufficient. Throughout the building, indeed, there seems a deficiency of lavatory accommodation, as in the Berlin Houses of Parliament. There is more spacious cloak-room accommodation, it is true, than elsewhere on either side of the cupola entrance, but a washstand or a water-closet are difficult to discover.

Referring to the plan of the "House of Lords" wing we find that, independent of its *foyer* approach from the central cupola, there are two main staircases from a vestibule at the further end of the block. This entrance is practically the usual one for members and officials. The vestibule and staircases also lead to the sets of committee-rooms and numerous offices on the ground-floor and mezzanine. The plan explains itself, the only remarkable point being the number of large council chambers which have been provided and the extravagant ante-room space each one receives. Altogether the amount of corridor space, ante-room, and *foyer* accommodation is extraordinary, as also the size of individual rooms. The President of the "House of Lords" is provided with three rooms, and the Clerk of the House has similar accommodation. The corridor on the river front is practically again a *foyer* in itself, and its aspect will certainly make it more popular than the official ones, which are only lighted from courtyards. There seem to be a number of service stairs, gallery stairs, lifts, &c., which should certainly greatly facilitate the work of the ushers. The "Lords'" debating chamber has seats for 300. Its arrangement will be seen in our illustration. The position of the President's seat, and the height of the "orators' tribune," are both remarkable. The gallery accommodation is exceptionally large, and certainly well planned.

On examining the plans of the "Commons" wing we find that it is in reality the simple *facsimile* of the "House of Lords." The Deputies' Debating Chamber alone shows more accommodation for members, seats for four hundred and thirty having been provided. As will be seen from our illustration, the architectural treatment of this hall is somewhat different from the first-mentioned one, but its gallery accommodation is the same. Members of the Chamber of Deputies have their business entrance at the further extremity of their wing, and their committee-rooms and offices are again on the ground-floor and mezzanine respectively.

As regards the general dimensions of this block, its frontage is 885 ft., and the cross of the cupola is 311 ft. above the pavement. The diameter of the *salle des pas-perdus* is 65 ft.; the grand staircase measures 103 ft. by 83 ft. 6 in. The height of the floors from floor to floor is 18 ft. for the ground floor, and 14 ft. for the mezzanine. In the main floors the heights vary from 24 ft. 6 in. in the offices, to 32 ft. in the committee-rooms. These dimensions are all unusually large.

The *façades* are fully explained in the river elevation, of which we show a perspective. The material used is a national freestone, the roofing is slate and copper, and the glazing is plate-glass.

As regards the construction, the foundations proved to be interesting work. The bed of the old Danube had first to be reached, and then a layer of cement concrete, 6 ft. 6 in. deep, spread over the whole site excepting where the courtyards are shown. Here the layer was only 3 ft. 3 in. thick. The quantities of material used were enormous, and a special testing-station was erected for the regular analysis of the cement used. The walls are mainly of brickwork, faced inside as well as out with various kinds of freestone. About forty-five millions of bricks are used on the work. The masons' materials are from the Hungarian hills; some granite, however, had to be imported. The flooring is of fire-resisting material, and the construction of the roof is of iron girder-work. The ceilings are to a great extent faced with natural wood, and there is much panelling. Hungarian tiles will be used for pavements, oak parquetry for the floors. The natural wood and stone is to show everywhere, and no paint is to be used. The architect hopes to be able to get his wrought-iron work done in the country, and native artists will do the fresco and sculptural work, of which there will be much. Nothing is said at present about the date of completion, or the actual cost. The building operations will certainly not be hurried, as the block is to serve as a school for the artists and craftsmen of the country.

COATS MEMORIAL CHURCH, PAISLEY.

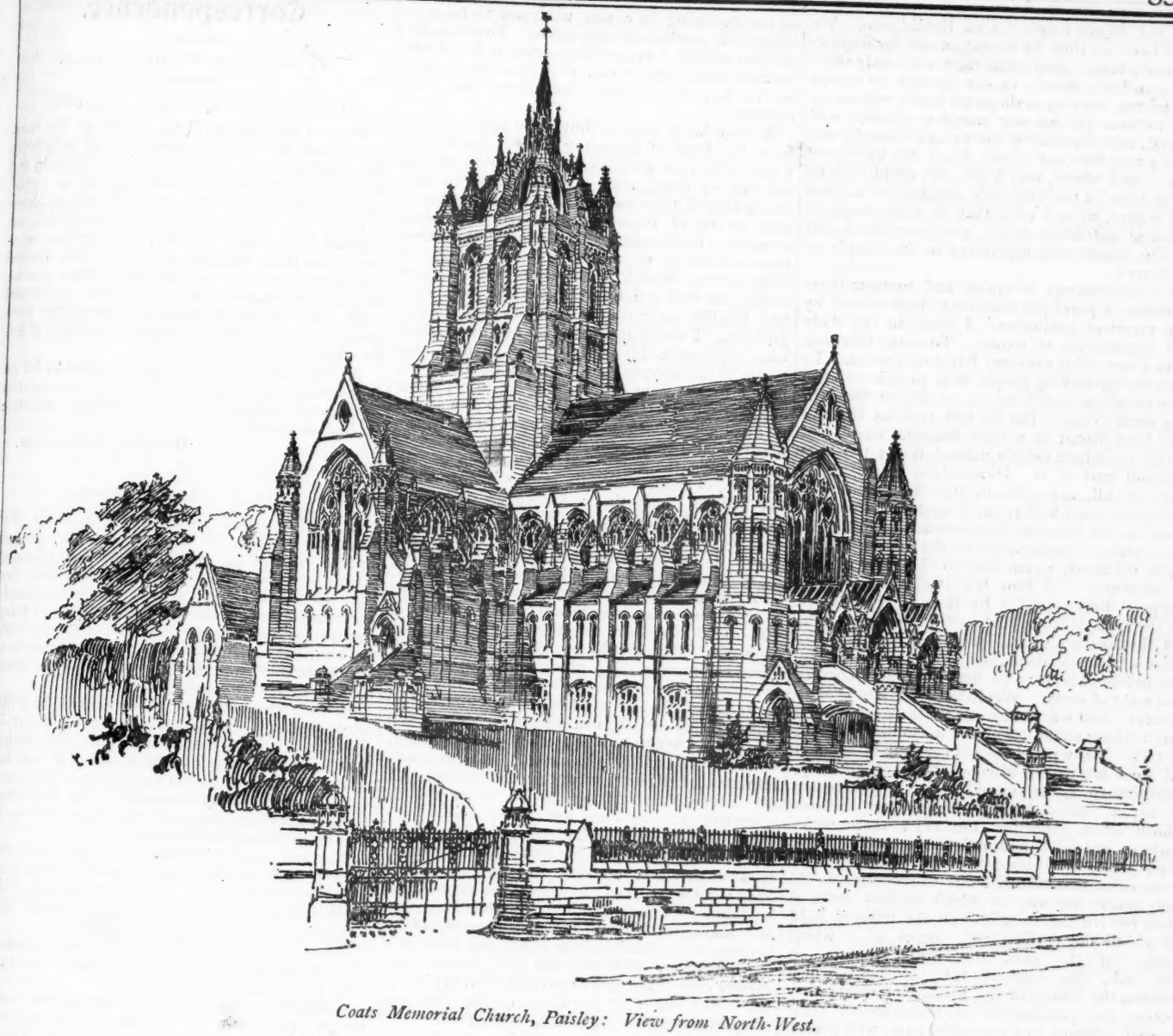
The accompanying sketches, sent to us by the architect, Mr. Hippolyte J. Blanc, illustrate this large and important church, which was opened in May of the present year. The church was erected as a memorial to Mr. Coats, a life-long member of the congregation, by his widow and family.

The design by Mr. Blanc was chosen in a competition, from nine designs submitted. The object of the architect has been to give the building as far as possible a memorial character, hence the "crown" treatment of the central tower, a kind of termination which has been not infrequently made use of in designs for monuments, ancient and modern. As in the original conditions it was stipulated that a large hall should be provided in connexion with the church, it appeared that on a sloping site this could be best provided under the church, by raising the latter as on a platform at the lower end of the slope of ground. This arrangement not only provides in a convenient manner for the wall, but has the effect of giving great dignity to the western entrance of the church, which is approached, as the sketches show, by a lofty and wide flight of steps, forming a striking feature in the design.

After the design had been matured in its main features, it was decided to widen the nave from 32 to 40 ft., but the transepts were retained at the original width. This rendered the plan of the crossing oblong, and the lower portion of the tower also; and in order to bring the upper portion to the square form necessary for the "crown" termination, the north and south walls had to be set back, above the roof-ridge line, in the manner shown in the general exterior view. This difficulty has been met in such a manner as to add to rather than detract from the effect of the tower. The building as a whole is a powerful and remarkable specimen of modern church architecture.

MR. WATERHOUSE ON THE STUDY OF ART AND NATURE.

The following remarks formed a portion of an address recently delivered by Mr. Waterhouse at the opening of the new buildings for the Technical Institution at Newbury:—"We hear much of the danger of foreign competition robbing England of her trade, and consequently of her wealth; and such danger is already at our doors. This danger arises from two causes. First, from foreign labour producing more for less wages, and secondly, from this labour being often directed by more intelligence than ours. It is this latter cause of our deficiency, the lack of the due influence of mind on matter, that these grants for technical education are intended to rectify. It is most earnestly to be hoped that the people of England will avail themselves of the opportunities now, perhaps, for the first time, presented to them, and seek to be guided more and more by intelligence in their work, and not so much as formerly by that dear old "rule-of-thumb." This is the more important, as we do not wish to see our people over-worked. Many of the workers in the most well-to-do Continental nations labour fourteen, fifteen, or sixteen hours a day. This



Coats Memorial Church, Paisley: View from North-West.

Coats Memorial Church, Paisley: West Porches.

will not do any longer for us Englishmen. We must have our time for recreation and for improving our minds. And quite right too; only without something worthy of our interest to occupy our leisure, we may perhaps be better without it. Let us then put all our energies, physical and mental, into our work while we are about it, and have a care that our leisure hours are well spent also. And where, may I ask, sir, could they be better spent in the long dark evenings of autumn and winter, at any rate, than in that temple of technical instruction which you have just raised for the benefit and enjoyment of the people of Newbury?

For the evenings of spring and summer there is perhaps a purer joy even than those offered by your excellent institution. I mean in the study and appreciation of nature. To many this may seem a somewhat vain and frivolous pursuit. To mere money-making people it is profitless; even to those whose hearts are set on higher things it may seem so too. But the fact remains that we have been placed in a most beautiful world, and in this immediate neighbourhood is not the least beautiful part of it. Its wonders, its mysteries, invite us all, are open to all. The poorest as well as the most well-to-do of us have offered to them in the beauties of nature an inexhaustible feast, almost intoxicating to the senses, giving joy to the heart, an antidote to the petty worries of existence. Yet how few avail themselves of the good thus provided for them? If we search for the cause it is not far to seek. We have eyes, but they see not; ears, but they hear not. The cause of our blindness, our dulness, our apathy and indifference, is to be found in our ignorance and want of study. We do not train our eyes to observe; and we cannot see what we know and care nothing about. To take a familiar instance or two. Many people would say that in summer all trees are green, whereas they are all grey, inclining to green more or less; with every variety of hue and tone,—their upper surfaces bluish when reflecting the sky; their under surfaces reddish when reflecting sun-lit earth; their young July shoots are yellowish, or, as in some oaks, rose-colour. The unobservant would not notice the way in which various sorts of trees receive the sunshine, or the diffused light of a dull day; the broad masses of it which settle on the elm, the bright points on the oak, the feathery tufts of light which enliven the foliage of the ash. Nor would they notice the peculiarities of tree-growth; some species inclining to a pyramidal form, with central stem and leader; others with forked branches to a more globular shape, or to a flattened head, or to pendulous branches. Nor would they notice how special circumstances modify these characteristics of race, how wind persistently blowing from one quarter will incline the tree's growth to leeward; how the shade of other trees will drive it to strange manœuvres in its search for light and sunshine. What pursuit is more fascinating to the observant than the study of reflections in almost still water? Wayward they seem to be, and yet all submitting to inexorable law, from the point where they begin, so well defined, from the opposite bank to where they lose themselves in the submerged sunlit pebbles at our feet.

But you will say, what has all this to do with the new School of Technical Instruction we are opening to-day? Why would you send us out into the fields, woods, and commons, when we have just acquired this new source of interest and enjoyment at our very doors? To the point, then, without more to do. I notice that by far the larger number of your students hitherto have been those who attend the drawing-classes. Drawing is, in my opinion, the best key whereby to unlock our appreciation of the beauties of nature, and it is here, under the able direction of your Art Master, that you can be put in possession of this precious "open Sesame." If rightly practised, drawing teaches us to observe with an intelligent eye. It is not merely necessary to acquire dexterity in the use of pencil and brush. We need work with head and heart, as well as with hand; and there is yet another faculty which the art student ought to practice—that of memory. I would commend the habit, after a careful study of any object in the schools or scene out-of-doors, of reproducing it from memory only, and then comparing it with the original study, or, better still, with the subject itself. The knowledge beforehand that he is going to put his memory to so severe a test will act as a powerful incentive to the student to keep his mind, while at his sketch, on the *qui vive*. He will observe the proportions of things, the subtlety of the curves of nature, the harmony and delicacy of her colouring in a way unknown to those to whom this method is unfamiliar. To the architectural student I know this practice to be of the greatest value, a short cut, if such a thing there be in art, to available knowledge and self-reliance.

So then let us learn to draw from motives apart from the hope of becoming professional artists. From their own standpoint the world is already too full of them, and, possibly from the very prodigality of their output, is more chary than it used to be of becoming possessed of modern pictures. Even painters of the greatest distinction are now by no means sure of disposing of their works, though such works were eagerly sought for and purchased some few years ago; and English art certainly shows no sign of retrogression. I would not therefore by any words of mine encourage the production of pictures as a means of livelihood; but I would do all in my power to advocate the learning to draw, as an accomplishment most useful in itself, as a source of great pleasure to its possessor, and chiefly as a means, and perhaps the most effective means, of approaching the study and appreciation of the beauties of nature. While saying this I would not have us forget that a knowledge of botany, geology, and other branches of natural science are also important means to this end.

Our national education, in which, of course, I include institutions of this kind, should, I think, be made to lead the rising generation to regard as something sacred the beauties of the world in which God has placed us, as one of His best gifts to man. They should be taught to look with aversion on everything which tends to degrade or destroy those beauties—on such things as waste-paper thrown carelessly about in meadow and hedgerow, on the discarded tins, kettles, and other litter, which now too often give an untidy, unworthy character to many an otherwise attractive Berkshire village; and, above all, our children should be taught to view with abhorrence the senseless and selfish work of the bill-sticker in spoiling and rendering sordid the aspect of our towns and the charms of the country It takes, they say, a good deal to rouse the British Lion; but I confess I am sometimes amazed that he takes so quietly, without an occasional roar and lashing of his tail, the disfigurement of his heritage at the hands of the selfish and often gulling advertiser. Not only are the pleasures and dignity of his existence imperilled thereby, but he has to pay dearer for his wares, or else get them of inferior quality; for does he not see millions of money spent annually in advertising, and is he not aware that all this money comes out of his own pocket (if he have a pocket?), poor old long-suffering British Lion. Now, if he chose, the schoolmaster could cure all this in the course of another generation by exposing such chicanery, and giving our children right views as to their duties and obligations to help keep the world in its beauty for the good and pleasure of all. A healthy anxiety for the enjoyment of others would, I believe, even lead us further. We should be careful that our persons, our houses, our gardens and fields should be as attractive and pleasant as our means would admit of, not to gratify personal vanity, but our own and others' sense of the decorous and beautiful. This generally will be of easy accomplishment. We shall have only to preserve what is beautiful, and prevent its disfigurement.

Again, the same spirit would make us careful not ruthlessly to destroy what remains to us of the good work of our ancestors, especially in the way of architecture. The building art in this country was a traditional art up to comparatively modern times, that is to say the style of a building did not depend upon the whim of its designer. Its style was the style of the day, and though style changed, it changed very slowly and from natural causes. This reality and spontaneity of style gave a charm to old buildings, which modern ones in these eclectic days can never possess; and it behoves us jealously to preserve what has come down to us from the past, not only for our own admiration and profit, but also for the benefit of our children. I hope, therefore, that the town of Newbury will make a strenuous effort to keep intact and in repair its ancient Cloth Hall and Granaries, which are, as I have before remarked, one of the three remaining attestations of its former renown as an important centre of England's commercial and manufacturing activity. Your wealth and your taste may yet give to Newbury many a noble building, but you can never have again another Jacobean Cloth Hall. It is a possession which the town ought to be proud of, and guard against ruin and destruction."

Correspondence.

To the Editor of THE BUILDER.

"DESIGN" IN THE FLORIN.

SIR,—The reverse of the florin of '87 bears four shields and four sceptres, two of each being for England and one of each for Ireland and Scotland respectively. One sceptre is tipped with an Irish and another with a Scotch emblem.

Upon the florin of '93 the four shields are reduced in number to three, representing separately the three component parts of the United Kingdom; and the four sceptres to two, one for England, surmounted as before by a globe and cross, the symbol of dominion; the other by a globe, and apparently an eagle, for what, if not for either Ireland or Scotland?

As this latter form of sceptre seems to be an innovation, will some student of numismatics be pleased to describe it more precisely, and state its import exactly?

J. HOUGHTON SPENCER.

DRAIN VENTILATION.

SIR,—I am still disposed to maintain that fresh air should be admitted at the bottom instead of the top of the inspection chamber wherever such a position is possible, and that that is the best position in cases, commonly occurring in town, where it is impossible to bring the anti-syphonage pipe or other outlet vent into the top of the chamber, and the only outlet is at the bottom of the chamber through to drain running under the house.

In such case the rush of air caused by a discharge through the drain would force the air in the chamber through the most convenient outlet. This would be the inlet vent, if placed at the top of the chamber, and unprotected by a mica flap; but, with the inlet vent placed at the bottom of the chamber, the motion of the air, according to my theory, would be different.

The air, passing through the drain and displacing the air in the chamber, would find a more ready exit in the reverse current at the top of the drain than in the inlet vent, where it would have to displace a column of heavy cold air.

To make the plan effectual the drain must be of sufficient size to allow of a reverse current; a 6-in. pipe is usually large enough.

Considering the very important position sanitation occupies in the science of building, it is surprising that drain ventilation should still be such a debatable question, but so it must be until it can be studied and settled experimentally.

Since the Science Committee of the Institute are endeavouring to raise a fund for experimental research into questions relating to building, and the Sanitary Institute have made useful experiments on the flow of water through drains, there may be some hope that this important subject of drains will soon receive the attention it deserves.

ARTHUR BAKER.

SIR,—In the correspondence on this subject few or your correspondents have looked at the first principles of the question, namely: 1st. The object of the disconnecting trap; 2nd. The object of ventilating main sewers. If you can elicit further information on these questions, you will be doing a greatly-required and long-neglected public service.

As to the first point—disconnection; traps are not disconnectors, but merely hindrances to circulation, hence the object of disconnecting chamber with fresh air inlet over trap, so that all noxious gases passing through are purified, and the disease germs killed or so reduced or diffused as to be innocuous, and certainly not likely to penetrate the second trap.

This chamber is thus in reality the only protection the individual householder has from the filth of the whole community, and perhaps from the specific infection of any fever-haunted neighbour. When he is compelled to abandon it and to make the pure and cleanly surroundings of his home the outlet for the emanations from the filth of the slums and alleys laden with the accumulated disease-germs of the whole town, he will no longer need to boast that an Englishman's home is his castle. As to the trap, it certainly loses fall, and offers some little obstruction to the flow, but these are trifling objections compared with the benefits gained.

It may be true that it retains 35 per cent. of solid matter, and yet may be a "well"-constructed trap, but whether this sewage will be offensive before rechanged is a question. Fresh sewage is not generally offensive when in water for several hours. Even it it were, the ventilation above should so dilute the effluvium as to render it unobjectionable, and there is little risk of disease infection. It may occasionally also cause stoppage when drains are improperly used, but this is certainly an advantage

in calling attention to the fact. Loaves of bread and sheets of newspaper are not desirable even in main sewers.

If this trap is removed the inner trap is only a hindrance to the circulation of air from the sewer, and owing to the variation of atmospheric pressure between the inside and outside of a house is little use even for that. It would also be liable to syphonage if improperly ventilated and when accidently unsealed and in cases of defective joints, the house would become the direct ventilator of the public sewer, which, despite the general foulness of our domestic atmosphere, would not tend to improve matters. There is no doubt that the house drain is invariably dirty, but passing filthy sewer-air through it instead of pure air is not likely to improve it but rather to introduce disease germs to a favourable home.

As to the second point, the ventilation of main sewers seems yet to be a point more for the chemist and biologist than the engineer. The main object of ventilation has generally been to preserve the seal of the trap your correspondents propose to abolish, and secondly, to reduce the malignancy of the disease germs and prevent suffocation of persons working in sewers. The latter point can be disregarded, as their protection can always be specially provided for. As to the second, we need to know more of the life history of bacteria—whether they can live in a hermetically sealed sewer without oxygen; whether ventilation reduces the malignancy of diseases arising from sewers and sewage, and if so, why; are the germs reduced in number or in power or both; how soon these germs will expire in the open-air of an ordinary town, and generally the best protection from them; what are the ill effects of sewer-air other than from germs, and will its dissipation in a large volume of air obviate them; also, to what extent ventilation will aid in stimulating putrefaction, that is, decay having commenced, will not ventilation hasten it? When these questions are answered ventilation may be more seriously discussed, but not until. At present the disconnecting chamber seems an effective barrier against disease germs, so why not retain it?

As to any real system of ventilation as architecturally understood, the task seems impossible; we have not yet learnt how to ventilate houses. The varying air-space, velocity of flow, filthy sides exposed, and vapours given off, and the varying temperature of sewage, the influence of external heat and wind, and the friction with water and pipes, are difficulties awkward to overcome, even if air currents were in any way amenable to discipline, which they are not. It is questionable whether unlimited ventilation would prevent the outlets being a nuisance, and as the main object of the sewers is to get rid of the filth, it is surely a questionable policy to use it to generate gases which are to be forced on the public in homœpathic or larger doses, as the case may be. Without ventilation, disease germs cannot get into the air, and manhole grates at intervals of say 200 ft., protected as chemists and authorities on bacteria may determine, seems to be the wisest course to pursue until the subject is better understood.

But, of all systems proposed, that of ventilating-pipes seems most unsatisfactory. Being quick conductors, in a hot sun they are too active, and in the cold they condense the vapour and cause down-draught. The friction round the numerous curves is a great objeotion if free ventilation is desired, and the blockage by iron rust is perhaps the most desirable end, as in connexion with a house they generally discharge near slates and chimneys, where, for reasons already stated, the gases readily find access to places where they are best calculated to do the most harm. With cottage property with already too limited air-space, a fall-pipe per house would mean about forty per acre, whereas with villas, and a superabundance of air, perhaps only four per acre.

Our streets of cottages are invariably hideous, and the present ventilating-pipes help to accentuate the fact. When we have one per house wriggling round the front to 2 ft. above the ridge, the blind will have cause to rejoice, and the insanitary to be happy in filth.

JOHN BRETT.

August 21, 1894.

THE PROTECTION OF TRADE MARKS IN GERMANY.

SIR,—A new law for the Registration and Protection of Trade Marks has been promulgated in Germany, and comes into force on October 1 next. This law, in its main provisions as to what constitutes a trade mark and is registerable as such, conforms very nearly to the Trade Mark Section of the English Patent Law of 1883. It also embodies provisions analogous to some in the Merchandise Marks Act of 1887, which traders who send goods into Germany would do well to make themselves acquainted with. Any person who knowingly or through gross carelessness applies the name or firm of another party, or a registered trade mark, is liable for damages, and, further, to a heavy fine, or to six months' imprisonment. Anyone who wrongfully applies a State coat-of-arms, or coat-of-arms of a district, or of a municipal or corporate body, for the purpose of creating confusion regarding the nature or value of the goods, or any person who offers for sale goods bearing such marks, will be punishable by fine or imprisonment. Foreign products which wrongfully bear the name and locality of a German firm, or a registered trade mark, on entering Germany as imports, or for transit, are liable to seizure by the Custom House authorities, and confiscation. When an illegal mark on the goods cannot be removed, the goods may be destroyed. Where German goods must bear a certain mark or signification on being imported into a foreign country, to indicate that they are of German origin, or if such goods are not so favourably treated at the Custom House in respect of the trade marks, as the goods of other countries, the Federal Council is empowered to subject goods imported into Germany from such foreign countries to the same restrictions, and in case of violation thereof to seize and confiscate the goods. All trade marks at present registered in Germany must be re-registered under the new law within the next four years—*i.e.*, before the 1st of October, 1898; there is no necessity, however, for any immediate action on the part of the proprietors of such marks, but at the same time no advantage is gained by postponing it.

W. P. THOMPSON & Co., Patent Agents.

TESTING DRYNESS OF PLASTER.

SIR,—I am in some difficulty as to the safety of occupying a house now in course of erection which I very much wish to inhabit (if I can do so safely) at Michaelmas next. The house is built on pure chalk rock, and there are no cellars. The floors on the ground floor are to be of the best concrete, but are not yet laid. The concrete covered in the sitting-rooms with wood-block flooring. The walls (which are double, with an air-space of 4½ in. between them) were finished, and the roof also, about four weeks ago, and the plastering of the upper floor was completed on the 16th inst. I should here mention that I am not going to paper any of the rooms till at least a year after the house is occupied.

What I hope some of your readers may be able to tell me is—Whether there is any recognised means of accurately testing the degree of dryness of the plaster, say, in four weeks' time from now, and of judging from the result whether the rooms would be safe to sleep in on and from September 29.

ARAZATY.

BUILDING-LINE QUESTION.

SIR,—I intend building a cottage on a plot of ground adjoining my house, which is 6 ft. from the pavement or original building-line. I am desirous of building from the old line, but the Corporation of West Ham say I must set the cottage back to my house. As this is a great hardship I shall be glad to know what action they can take in the matter, the road being about 40 ft. wide, and two-thirds of the property is built on the old line.

D. S. MCBEAN.

TINSLEY PARK BOARD SCHOOL COMPETITION, SHEFFIELD.

THE following correspondence in reference to the recent competition for the Tinsley Park Board School, Sheffield, has been sent to us for publication:—

TO THE CHAIRMAN AND MEMBERS OF THE SHEFFIELD SCHOOL BOARD.

GENTLEMEN,—The Council of the Sheffield Society of Architects and Surveyors have had their attention drawn by several competitors to the assessor's report on the designs submitted for the school at Tinsley Park-road, and to the award of the first place to the design, "Sanglier Rouge."

The service rendered to the School Board by the architects of Sheffield, in submitting fourteen sets of designs for the school, at a cost to the profession of considerably more than the commission to be paid for the completed building, is, it is hoped, a sufficient reason for the Council of the Sheffield Society of Architects and Surveyors venturing to submit their views to the Sheffield School Board.

The award appears to be based upon one of the concluding paragraphs of the assessor's report rather than upon the preceding fuller criticism.

The assessor brackets together as equal "Sanglier Rouge" and "Multum in Parvo," the former for his higher qualities of architectural design, the latter for his more perfect fitness of plan, and states that "on a third ground, viz., that of suitability to site, he prefers the *former*," although from the detail report the *latter* appears to be the one he prefers.

The assessor's fuller criticism of design, "Sanglier Rouge," states that it provides only three infant class-rooms (which is contrary to the conditions of the competition); and, after enumerating points in which the plan does not comply with the requirements of the Education Department, states "but although ranking artistically higher than any other, the defect of plan is serious."

The assessor's fuller criticism of design, "Multum in Parvo," states that "the position of the building on the land is well managed, and, in fact, all the playgrounds will be sunny," that he "is the only one who has met all the difficulties without any waste or surplusage in plan"; and further that "he is also at the top in point of economy."

The conditions of the competition state that the buildings are to fulfil the requirements of the Education Department.

The rules to be observed in planning schools, as issued by that department, enumerate "convenience of plan, suitable lighting, and proper sub-division into classes," as leading essentials, and "the school architect is recommended first to perfect his plan."

The Council of the Sheffield Society of Architects and Surveyors are therefore of opinion that the first place should have been awarded to "Multum in Parvo"; and further, that the design "Sanglier Rouge" should have been set aside, as not having complied with the conditions as to the number of class-rooms for infants.—We are, Gentlemen, yours respectfully,

(Signed) EDWD. M. GIBBS, *President.*
" CHARLES HADFIELD, *Vice-President.*
Sheffield, July 28, 1894.

School Board Offices, Sheffield.
August 17, 1894.

DEAR SIR,—I am directed to acknowledge the receipt of a letter signed by yourself and Mr. Hadfield on behalf of the Council of the Sheffield Society of Architects and Surveyors, and dated July 28, 1894.

The Board regret to find that an objection has been taken to their decision upon the recent competition, but I am to point out that your Council has evidently laboured under the mistake of supposing that an assessor was appointed, whereas the Board simply asked for advice, and reserved to themselves the full power of determining which, if any, plan should be adopted. They made their selection in perfectly good faith, after very careful consideration, and they cannot alter their decision.

Yours faithfully,
(Signed) JNO. F. MOSS, Clerk.

E. M. GIBBS, Esq.,
15, *St. James' Row, Sheffield.*

JOHN F. MOSS, ESQ., CLERK TO THE SHEFFIELD SCHOOL BOARD.

DEAR SIR,—I have to acknowledge the receipt of your letter of August 17th, 1894.

The Council of the Sheffield Society of Architects and Surveyors request you to assure your Board that they never doubted but that the selection of the designs was made in perfectly good faith.

The Council have, however, to notice that your letter of August 17th does not reply to the main points of contention of the letter of July 28th, and as your letter has been published, the Council have thought it desirable to send copies of the whole correspondence to the professional papers.

Yours truly,
(Signed) EDWARD M. GIBBS.

The Student's Column.

DETAILS OF RURAL WATER SUPPLY.—VIII.

VARIOUS FORMS OF PUMPS (*continued*).

THE working barrel is formed of hard grey metal, bored out and made truly cylindrical in the larger pumps, and with a gun-metal or copper liner inserted in the smaller ones. The ends are slightly bell-mouthed, and are made sufficiently long to allow from 3 in. to 12 in. clearance beyond the actual stroke of the pump. The thickness of the metal is greater than that of the rising main, owing to the wear and tear, and so as to allow for re-boring when necessary. In forcing-pumps the top of the barrel is made tight with a stuffing-box or gland packed with metallic material, which can be renewed without stopping the working of the pump.

The clack or waist-piece contains a turned conical seating for the valve. In some cases, in open-topped pumps, a second seating of larger diameter is provided above the one generally in use. The advantage of this arrangement is that it enables a temporary valve to be lowered, in the event of an accident, to act until access can be had to the defective valve. Door-pieces are fixed so as to enable the bucket and clack to be examined or changed. These, of course, are only available when the water is below the level at which they are situated. The diameter of the suction-pipe may be reduced below the level of the clack or valve to from one-half to two-thirds of the area of the working-barrel, except in the case of quick-running pumps, when the diameter should not be less than that of the working-barrel.

The rose, windbore, or strainer at the bottom of the suction-pipe takes various shapes, but care must be taken to make the aggregate area of the apertures not less than from two to two and a-half times the area of the suction-pipe.

The pump-rods are either made of wrought-iron with flanged joints bolted together, or of pitch-

pine connected by means of iron side-plates and bolts running through the rods. Hard-wood guides are affixed to the rods when working in a rising main, and metal rollers guide the rods when working a plunger.

The valves, of which there are at least two in every pump, either fixed or movable, require the most careful attention, as they frequently cause a large portion of the power of the pumping apparatus to be lost. It is essential that they should offer little resistance to the passage of the water in one direction, and close the passage quickly and entirely in the contrary direction, so as to prevent slip. The weight of the valve should be sufficient to close without knocking, and be light enough to be lifted without offering undue resistance to the water. In high lifts the valve is usually calculated at 1 lb. in weight per square inch of area, equal to 2·3 ft. of water; and for low lifts it varies from ¼ lb. to ½ lb. per square inch of area. The velocity of the water through the valves should not exceed 5 ft. per second. The valves used in pumps belong to one of two classes, the hinged or door, and the spindle valve.

The flap or hinged valve (Fig. 8) consists of a flap or sheet of leather, stiffened and weighted

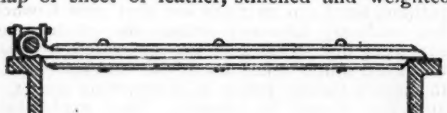


Fig 8.

with metal plates, working on a hinge, the shell being of wood or metal.

The butterfly valve (Fig. 9) is of frequent application, and derives its name from the wings or flaps, consisting of semi-circular discs hinged

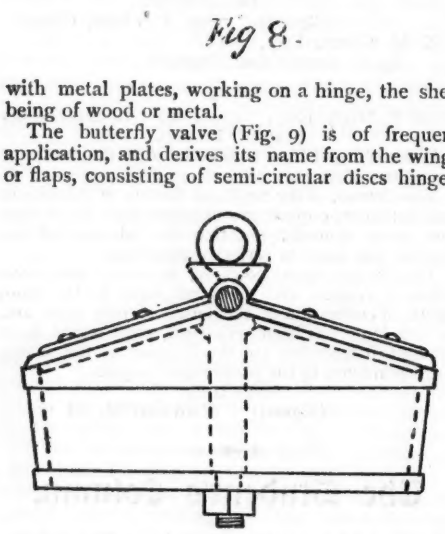


Fig 9.

to the centre of the shell. The wings, or flaps, are stiffened and weighted with metal plates, similar to the flap, or hinged, valve, and the shell is formed of wood or metal.

The mitre valve (Fig. 10), used mainly in horizontal pumps, consists of a circular metallic

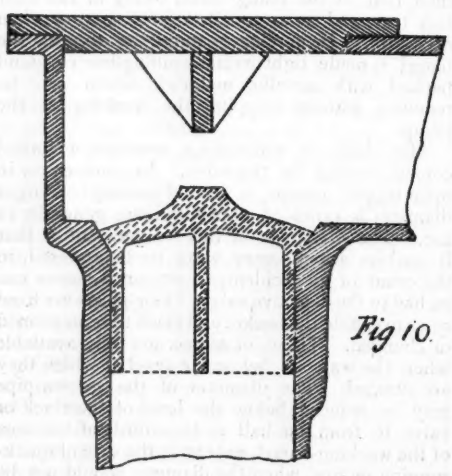


Fig 10.

disc, with conical face, the upper portion having a short spindle to limit its lift, and feathers below to guide the valve on to its seat.

The rubber disc valves (Fig. 11), both single and double, are largely used for lift-pumps, and consist of an iron or gun-metal seat or grid, either forming part of the shell or fitting into a recess in it. The rubber forms the valve, and is prevented from rising too high by the guard shown in the figure. The apertures in the seat or grid are placed at an angle to produce a circular motion in the water, and thence in the valve. This prevents the valve from falling in the same position

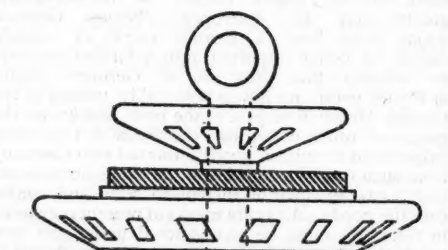


Fig 11.

and gradually cutting the rubber. Sufficient clearance must be allowed around the spindle for the lift of the valve. Strong dark blue rubber, which is a little heavier than pure rubber, stands better for heavy work.

The double-beat valve (Fig. 12) was first introduced by the well-known firm of Harvey & West, of Hayle, for the Wicksteed Cornish engine at the East London Waterworks. It was designed to overcome the battering and the great wear and

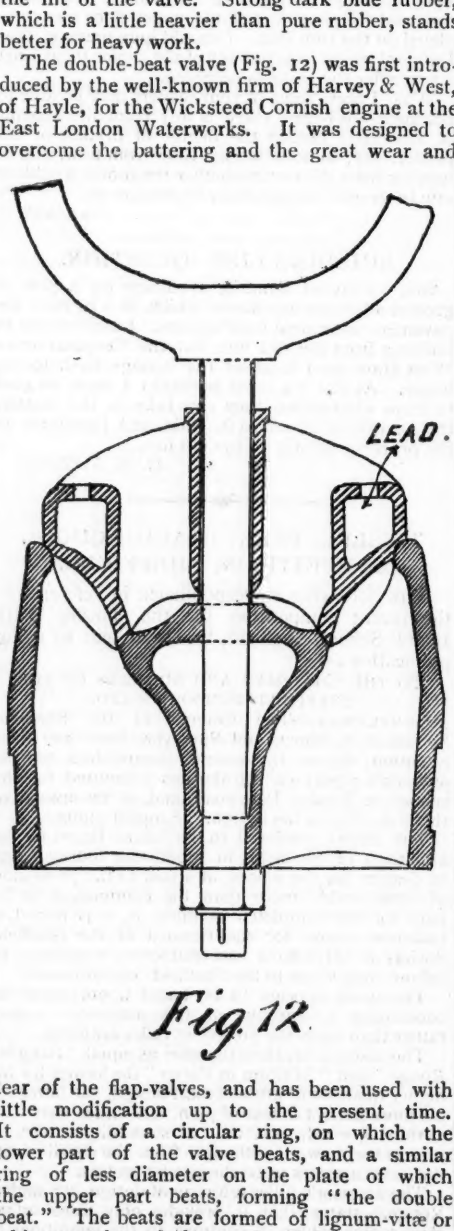


Fig 12.

tear of the flap-valves, and has been used with little modification up to the present time. It consists of a circular ring, on which the lower part of the valve beats, and a similar ring of less diameter on the plate of which the upper part beats, forming "the double beat." The beats are formed of lignum-vitæ or white metal, and frequently of leather. They are fixed to the valve and beat on a gun-metal seat. The valve consists of a double cylinder, one within the other forming one piece, open top and bottom, and working on a spindle. The webs connecting the parts together are placed at a slight angle, to cause the valve to rotate during the influx of water every time it rises and falls, which keeps the beats perfect and tends to prevent grooving. The great advantage of this valve is its small lift, owing to the two openings for discharge, and the vibration caused by the closing of the valve being diminished in consequence.

The three and four-beat valves only present slight variations, due to the multiple number of beats.

The Riedler valve, which is being largely used on the Continent for quick-speed pumps, is giving great satisfaction. Professor Riedler, the inventor of the valve, has made a series of observations on the action of valves (Indicator-Versuche au Pumpen), and the valve referred to is the result of his investigations, with a view to remedying the defects of valves used in quick-speed pumps. The lift is performed automatically, and the closing of the valve is accomplished by a spring and lever.

The air-vessel is simply a cylindrical vessel of cast- or wrought-iron with a dome top and inlet and outlet connexions from the pump at or near the base. The air in the upper part of the vessel is compressed until it balances the pressure of the water being pumped. At those parts of the stroke at which the motion of the pump piston exceeds the average speed, the surplus water further compresses the air to a small extent, and is thereby received into the air-vessel; again, at those parts of the stroke where the speed of the piston is below the average, the water thus stored up in the air-vessel is forced out by the expansion of the air, and supplies the deficiency. The air-vessel equalises the strain on the pumps and pipes through which the water flows, and renders the delivery nearly constant, and is to the flow of water what the fly-wheel is to an engine. The only trouble in practice is that of keeping the air-vessel charged with air, as compressed air in contact with water is more or less rapidly absorbed. Provision should be made either by having a small pump for the purpose of pumping air into the air-vessel, or a small cock should be fixed on the suction-pipe to allow air to be pumped with the water.

The quantity of water contained in a pipe is determined by the formula $x = \cdot00283\ d^2 l$ in which x = quantity in gallons, d = diameter of pipe in inches, and l = length of pipe in inches; being based on the fact that the area of a circle in square inches is $\cdot7854\ d^2$, and a gallon contains 277 cubic inches, therefore $\frac{\cdot7854\ d^2 l}{277} = \cdot00283\ d^2 l$; and $x \times 10$ = weight in lbs., the weight of a gallon of water being 10 lbs.

To find the pressure of water in a pipe. The pressure in lbs. per square inch is determined by the formula $x = \cdot433\ h$, in which x = the pressure in lbs. per square inch, h = the head or height of water in feet; being based on the fact that a cubic foot of water weighs 62·4 lbs. and a square foot contains 144 square inches, therefore $\frac{62\cdot4}{144} = \cdot433$ lbs.

The quantity of water delivered at each stroke of a pump is obtained by means of the formula given for the contents of a pipe. If d = the diameter of the working barrel or plunger in inches, l = the length of stroke in inches.

The quantity delivered per minute is determined by the number of strokes per minute multiplied by $\cdot00283\ d^2 l$.

These calculations make no allowance for slip, which varies from five to fifteen per cent., according to the condition of the pumps. The amount of slip is determined by accurately measuring the quantity of water delivered by the pumps into a cistern or tank of known capacity, or over a weir, and comparing the quantity with the calculated delivery, according to the dimensions of the pump. The method of gauging over weirs will be described in a future paper.

OBITUARY.

Mr. Wyatt Papworth.—We regret to record the death, which occurred last Sunday morning, of Mr. Wyatt Papworth. According to the *Journal* of the Institute of Architects, Mr. Papworth was present, a boy of twelve years, at the first general meeting of the Institute, held July 2, 1834, when his father, with eleven others, subscribed their names to the first address, and he attended the anniversary dinner held on the 2nd ult. at the Whitehall Rooms. He was born January 23, 1822, and was the second son of John B. Papworth, architect to the King of Würtemburg. Educated at University College School, he received his early professional training in the office of his father. Serving for a time under the Commissioners of Sewers for Westminster, he afterwards entered the office of Sir John Rennie, and subsequently accepted the appointment of assistant, and later of surveyor, to the Alliance Fire Insurance Company, the branch office of which at Ipswich was erected from his designs. This appointment he held for over forty years, retiring in

1888. He rearranged the large corner building in King-street, St. James's, for the Junior Army and Navy Club, and was successful in a number of competitions, though from one cause or another only three or four of his designs were carried into execution. He was elected Fellow of the Institute in 1860, and served for many years on the Council, of which he was a member at the time of his death. He had been Master of the Worshipful Company of Clothworkers, and took a leading part in the promotion of technical education. He was the editor of the last three editions of Gwilt's "Encyclopædia," the chief contributor to the "Dictionary of Architecture," which he edited from its beginning, and which he lived to complete. Among his other literary work may be mentioned the "Life and Works of J. B. Papworth" (his father), privately printed in 1879, and his "Renaissance and Italian Styles of Architecture in Great Britain," published in 1883. He was a frequent contributor to the *Journal* of the Institute, as well as to *Notes and Queries*. The essay, "Peculiar Characteristics of the Palladian School of Architecture," won him the silver medal of the Institute in 1849. Mr. Papworth, at the time of his death, was Curator of Sir John Soane's Museum.

HERR FRANZ SCHMITZ.—WE regret to announce the death of Herr Franz Schmitz, the "Dombaumeister" of Strassburg. He succeeded August Hartel in the supervision of the Strassburg Cathedral, and is considered to have most ably filled this difficult post during the present important period of its renovation. Herr Schmitz died at the age of sixty-two. He had only held office at Strassburg since 1890. Before that he was for six years architect to the Ecclesiastical Commissioners at Cologne, where he had been trained as a master mason on the Cathedral works. He was a pupil of Von Schmidt, of Vienna. Soon after 1864 Herr Schmitz practised privately, building a number of churches in the Rhine district and one at Copenhagen. Of the many buildings which were restored under his supervision we may mention the Bonn "Minster." Of his literary works, "The Cologne Cathedral: its Construction and its Decoration," is the best known.

GENERAL BUILDING NEWS.

CHAPEL, WOLVERHAMPTON ORPHAN ASYLUM.—The foundation-stone of a new chapel at the Wolverhampton Orphan Asylum was laid recently. The building is Tudor in style, and its erection will be on the rising ground at the southern end of the present building. It is cruciform in plan, consisting of nave, choir, and sanctuary, and north and south transepts, with organ chamber and vestry. The dimensions are—height 45 ft., length 100 ft., width across the transepts 50 ft., across nave and choir 24 ft. The children's entrance is on the north side, and visitors will be admitted by a porch at the north-west angle, while a western doorway is to be provided for exit for processions on festive occasions. Externally the new chapel will be faced with local bricks with diaper pattern worked in Hollington stone dressings. The windows are to be filled in with sheet glass and leaded lights, and the roof will be constructed of red deal and slated. A feature in the western elevation towards the Penn-road will be an oak turret, in which will be provided a staircase for access to the roof, and room for a bell if required. Internally the building is arranged to accommodate 400 persons. It is proposed to finish the walls in stucco relieved with stone dressings and bandings, the upper part of the chancel walls being faced entirely with stone, and the lower part stuccoed so as to admit of future decoration with frescoes or mosaic when desired. The aisles will be laid with encaustic tiles, the remainder of the floor being of wood blocks. The choir, consisting of thirty stalls, will be of oak, the remainder of the sittings being in red deal. The building of the chapel has been entrusted to Messrs. H. Willcock & Co., Darlington-street. The architect is Mr. F. T. Beck, Darlington.

NEW CATHOLIC CHURCH, BRIDLINGTON.—This building, which was opened on Thursday by Cardinal Vaughan, has been designed by and carried out under the superintendence of Messrs. Smith, Brodrick, & Lowther, architects, Hull. The church is in an early style of Gothic architecture, and consists of a nave, 54 ft. long by 17 ft. wide, with north and south aisles 8 ft. wide, and at the end of each aisle is a side chapel; one is dedicated to the Blessed Virgin, and the other to the Sacred Heart. Each chapel has above the altar, and at the side, traceried stone windows, which have been filled in with stained glass; the roofs are groined with the best selected pitch-pine boards, and moulded ribs, which terminate with a carved boss. The sanctuary is 20 ft. in length and 17 ft. in width, and has an octagonal apse, with traceried stone windows, and is divided from the nave by a lofty arch, resting on clustered shafts of polished Derbyshire marble, and capitals richly carved in Early English foliage and moulded bands and bases. The arches separating the sanctuary from the side chapels are filled in with traceried oak screens. The nave is divided on either side from the aisles by arcades of four bays, with moulded arches on octagonal shafts of Hopton Wood polished stone, and moulded caps and bases. The nave has a clearstory of lancet-headed windows and the aisles are also lighted by similar shaped windows. The choir gallery is at the west end above the main entrance, with an organ chamber at one side. The west front of the church is the most prominent feature; it is built of the best red stock bricks and stone dressings, and the massive angle buttresses terminate in pinnacles of stone. A long two-light traceried window and a single light one on either side fill the gables above the western entrance. Carved stone niches are fixed between the centre and side windows for statues of the patron saints. The gable is coped with moulded stone, and the apex is a finely-worked cross. There is a large working and private sacristy, and in a recess in the aisle wall is the Confessional. A large heating chamber is formed below the sacristy for a high-pressure heating apparatus. The accommodation provides for about 300 adults. The contract was let to Mr. John Rennard, at 1,870*l.* Mr. Bayart, of Bruges, has executed the oak stalls and screens, Mr. Ebner, the whole of the marble terrazzo floors. Messrs. King & Co. supplied the heating apparatus, and Messrs. Milne & Son, of Leeds, the basket-shaped gas pendants which hang from the centre of the nave arches. Mr. Frith, of Hull, has executed the stone carving, and the stone altar in the Lady Chapel is also his work.

YORKSHIRE PENNY BANK, LEEDS.—On the 17th inst. the new Yorkshire Penny Bank, Leeds, was opened. The new building has been designed by Mr. G. B. Bulmer (Messrs. Perkins & Bulmer). It has a frontage to Toronto-street of 115 ft., and the main front to Infirmary-street extends over 103 ft., while at the angle a tower rises to a height of 120 ft. The bank proper, which is located on the ground floor, has two entrances from Infirmary-street, and is a room 90 ft. by 40 ft. A series of arches with carved stone caps and bases run around the room, those to the front and rear enclosing the windows, while the corresponding spaces on the side walls are filled in with marble, and the spandrels between the arches with marble mosaic. The floor space in front of the public counter is laid with marble mosaic, the floor behind being laid with wood blocks, and the ceiling is panelled with fibrous plaster. The desks and counters are of oak, and the same material has been employed in panelling the room. At the far end of the room is a hydraulic lift which carries the ledgers, &c., down to a vault below. The inspection screens, between the bank and the adjoining rooms of the manager and the assistant-manager, are filled with coloured glass, and the room is lighted at either side by five plate-glass windows. Leading out of the manager's room is a strong-room, constructed of steel plates and steel rails in cement. The manager's and sub-manager's rooms are separated by a corridor leading from the bank to the board-room. The sub-manager's room is on the right-hand side of the corridor, and beyond it is the inspectors' room; while on the other side of the passage is a hydraulic lift, communicating with all floors of the building, and intended for the use of the porter. Beyond the lift is what is known as the directors' entrance, which leads from Toronto-street, and the directors' cloak-room, with floor, walls, and ceiling of glazed tiles. The board-room is 33½ ft. by 24 ft. The walls are panelled with a dado of English brown oak, the space above being lined with Sienna marble, with deep red bands. The floor is laid with parquetry. The premises are lighted throughout with electricity. To the rear of the bank room, and at the right-hand of the building, is a wing, with a separate entrance from Infirmary-street, containing accommodation for the clerks. On the ground floor there is a lavatory, with tiled walls and ceiling, and mosaic floor. The bank is warmed on the hot-air principle. The whole of the ground floor is occupied by the bank premises. The two upper floors are laid out in suites of offices. These are approached by a stone staircase, placed in the tower, and also by a hydraulic passenger lift, which has been erected by Mr. Robert Middleton, of Sheepscar Foundry. There are on each of the upper floors five suites of offices, with from two to five rooms each. On emerging from the staircase, on either floor the visitor passes through a vestibule, from which corridors, running at right-angles along the two main lines of the building, give access to the offices. The passages are laid with mosaic, and the walls and ceilings are tiled. All the offices are in every case illuminated by electricity, and lighted by windows. The rooms are laid with wooden blocks, and are fitted with majolica fire-places. The building, which throughout is constructed as far as possible of fireproof material, represents a total outlay of about 50,000*l.*, and has occupied about three years in erection. Messrs. Nicholson & Sons, of Leeds, are the general contractors; Messrs. Illingworth & Ingham have supplied the wood block and parquetry floors; Messrs. Marsh, Jones, & Cribb the oak fittings of the bank and board-rooms; and Mr. Wragge, of Manchester, has carried out the wrought-iron ornamental work to the architect's designs. The marble and mosaic work has been provided by Messrs. Pattison & Sons, of Manchester; the coloured glass by Messrs. Powell Bros., of Leeds; and Messrs. Dixon & Son, of Leeds, have supplied the wiring for the electric lighting. Mr. Gilbert Seal, of London, has executed the fibrous plaster ceilings; and the system of hot-water heating apparatus has been fitted by Messrs Ashwell & Nesbit, Leicester.

CONSERVATIVE CLUB, PONTYPOOL.—The foundation-stone of the new club in Osborne-road, Pontypool, has just been laid by Mrs. J. C. Hanbury. The architect is Mr. D. J. Lougher, Pontypool, and Messrs. Monk & Co., of Newport and Crumlin, are the contractors.

NEW HOTEL, LOSSIEMOUTH.—Contracts have been arranged for the erection of a hotel at Wotfield, Lossiemouth, Elginshire. The building will be built in a free Classic style, with large public rooms. The bedroom accommodation, in the first instance, will be for thirty guests, and, when finished, will accommodate forty-five guests. The site overlooks the golfing links, and in the grounds will be a large bowling-green and tennis-courts for the recreation of visitors. Mr. R. B. Pratt, of Elgin, is the architect.

TECHNICAL SCHOOLS, OXFORD.—The formal opening of the new block of buildings erected in Church-street, St. Ebbe's, by the Corporation of Oxford, for the purpose of a school for technical instruction, took place on the 14th inst. The building has been erected at a cost, including fittings, of about 4,500*l.* The front elevation has been designed by the architect to consist partly of the old school house and partly of new work, the latter being of red Headington bricks, with dressings of box-ground freestone, and gabled. The main gateway leads through a wide-arched corridor into a yard. From this corridor there are entrances on the right hand and on the left to the various class-rooms intended for the work of the science, art, commercial, and domestic students, and also to the caretaker's rooms. This block of buildings occupies the whole of the south and east sides of the school. On the north side of the yard, and facing the entrance through the corridor, are the workshops for the wood and metal departments. The department for science students consists of three rooms, a lecture room, and chemical and physical laboratory, and a master's room. The site of these rooms was formerly that of the Bluecoat School. The department for art students consists of a room, 52 ft. by 22 ft.; also two class-rooms, together with a master's room. The art rooms are on the first floor of the new portion of the buildings; on the ground floor of the same is a corridor opening into three large class-rooms, which may be used as required, either by science, art, domestic, or commercial students. The buildings are heated by the hot-water system, the boiler and storage rooms being in the basement below. The architect was Mr. H. W. Moore; the builder, Mr. Charles Curtis; and the clerk of the works, Mr. R. England.

BOARD SCHOOLS, GATESHEAD.—New Board Schools have just been completed at Gateshead. They are placed on a site at the junction of old Durham-road with Inskip-terrace. There is accommodation for 1,080 children in three departments—viz., boys, girls, and infants, the latter being a one-story building in a separate block. Advantage has been taken of the fall in the site by providing a manual instruction room and a cookery class room in the basement story of the senior school, which are accessible from both the boys' and girls' departments. A central corridor gives access to all the class-rooms. The school-rooms are divided by means of patent movable partitions; accommodation in the way of cloak-rooms, lavatories, store-rooms, &c., is provided. An emergency staircase (with extra exits) is provided at the east end of the main school. The playgrounds, with play-sheds, offices, &c., are separate in each department. The materials are red local bricks, with stone dressings for exterior walls. A caretaker's house, consisting of a sitting-room, kitchen, scullery, and three bed-rooms, &c., is situated at the angle of old Durham-road and Inskip-terrace, and commands all the entrances. The heating throughout is by means of hot water; at the same time each class-room is provided with a fireplace. The contractor is Mr. Thos. Hunter, of Washington, and the sub-contractors are:—Slating, C. Nicholson, Newcastle; plumbing, Messrs. Threlgeld & Wallace, Newcastle; plastering, W. R. Dodds, Jarrow; painting and glazing, Thos. Metcalf, Darlington. The heating is by Messrs. Henry Walker & Sons, Newcastle. The contractor's price for the whole of the work is 8,227*l.* The architect is Mr. Stephen Piper, of Newcastle, whose plans were selected in competition. Mr. Edington has acted as clerk of works.

PORCH, CHURCH OF ST. PETER, GREATWORTH, NORTHANTS.—A south porch, of thirteenth-century design, has been added to the parish Church of St. Peter, Greatworth, Northants. The builder was Mr. Watts, of Helmdon, and the architect, Mr. J. Timms, of Banbury.

WELSH CALVINISTIC METHODIST CHAPEL, LLANGEFOIE, ANGLESEY.—Plans prepared by Mr. R. G. Thomas, of Menai Bridge, have been selected for a Welsh Calvinistic Methodist Chapel, at Llangefoie, Anglesey. The cost of building will be about 4,000*l.* The style adopted is Italian, with an open portico of Corinthian columns.

RESTORATION OF FOLKTON CHURCH, SCARBOROUGH.—The Parish Church of Folkton, near Scarborough, is now being partially restored. The works which are at present being carried out are the

repairs of the masonry of the inside of the church, and also of the walls. The floor of the church is being lowered to its original level, the floor of the sacrarium being tiled. The nave of the church will be seated with open benches, and stalls are being placed in the chancel, and new altar-rails and standards, and there is to be a new pulpit. The wood windows on the south side have been replaced with stone ones of fifteenth-century character, and a new door is also to be placed on this side of the church. The whole of the works are under the superintendence of Messrs. Smith, Brodrick, & Lowther, architects, of Hull; and the contract is being carried out by Mr. R. Kilvington, of Nafferton, and Mr. Rudd, of Driffield.

SANITARY AND ENGINEERING NEWS.

Projected Improvements at the Harbour, Aberdeen.—Mr. Henry H. Wake, C.E., Harbour Engineer, Sunderland, who was consulted on the matter, has recommended to the Aberdeen Harbour Board that a new entrance to the Upper Dock be formed about 70 ft. to the south of the present waterway, and that the existing narrow bridge there from one side of the docks to the other be replaced by a steel single-swing cantilever bridge with bow-string girders, capable of accommodating two lines of railway, besides foot and carriage traffic. He also advises them to widen Regent Quay by about 50 ft. on an average alongside the Victoria Dock for a length of 700 ft. eastwards from the new bridge, and to erect two new goods-sheds, 45 ft. wide, with double line of rails between the sheds and the quay face. These works (including hydraulic machinery, abutments, north approach to bridge, &c.) will cost fully 30,000*l.* Mr. Wake also recommends the widening of Trinity Quay and the portion of Regent Quay along the north side of the Upper Dock, and the construction of other two goods-sheds there at an additional cost of 16,000*l.*; and the Works Committee of the Harbour Commissioners have recommended that for the purpose of carrying out the improvements contemplated, further borrowing powers, to the extent of 50,000*l.*, should be applied for in the private Bill, as to rates, &c., to be promoted by them in the ensuing session of Parliament. The resident Harbour Engineer, Mr. W. Smith, M.Inst.C.E., has also presented a report to the Commissioners as to the disposal of dredgings and the increase of dock accommodation. He states that in widening the navigation channel and deepening it to 28 ft. at high-water of spring tides, besides rock excavation, 200,000 cubic yards of soil and silt, to a great extent stiff red clay, will have to be dredged within three years. He points out that the fishing industry, besides occupying a large portion of the tidal harbour, will monopolise the Albert Basin, and that there is no room for much further expansion of the commercial shipping trade in the Victoria and Upper Docks, even with widening of quays and erection of sheds. He therefore proposes that the Commissioners should apply for Parliamentary powers to acquire the foreshore between the North Pier and the Beach Battery, as well as the ground at present occupied by the ropeworks and timber-yards at Footdee, and a portion of the Esplanade at the sea beach, which was made up by the Commissioners. The total area of ground would be 70 acres, and on this site, when required, might be formed a large wet dock with quays, to be entered from the tidal harbour by a lock at Pocra Jetty. Mr. Smith suggests that the soil and rock to be dredged as above noted should be utilised in forming a watertight embankment, about 100 ft. wide, protected by a cemented stone-pitched slope and concrete parapet along its sea face, and extending from the Old Round Head of the North Pier to the Beach Battery, a distance of 1,100 yards. This would reclaim from the sea 30 acres (included in the above 70), a portion of which would afterwards be filled up with silt from the harbour by means of a sand-pump placed on one of the large hoppers. The expense of the dock and quays is not stated; but the cost of the embankment, slope, and parapet is estimated at 15,000*l.*, exclusive of the value of the foreshore rights and of the other property required. It has been remitted to the Works Committee to report more fully next month on all the above subjects.

Sewage Scheme, Coventry.—The General Works Committee of the Coventry Corporation having agreed upon the following report, it was submitted to the City Council at their meeting on the 14th inst. and adopted:—"Your committee have received from Mr. Mansergh a report on the disposal of the sewage of the city. This report, together with the whole question of sewage disposal, your committee referred to a sub-committee. . . . It appeared to them, as it does to your committee, that the Baginton scheme recommended by Mr. Mansergh labours under two disadvantages, (1) the difficulties to be apprehended in dealing with the proprietors of the land to be acquired and the adjoining residences, (2) the restricted area of land available, especially having regard to the probability of future extension. The sub-committee therefore requested Mr. Mansergh to consider the possibility of taking the effluent from the present works to a filtration area at Ryton Bridge instead of at Baginton. Mr. Mansergh has made a rough estimate of the cost of such a scheme carried out on the same lines as the Baginton scheme mentioned in his report, viz., enlarging the present tanks and treating all the sewage and rainfall there up to a maximum volume of 19,000,000 gallons per day, carrying half that volume to the new filtration area, and dealing with any excess above half at the present filter area at Whitley. The estimate is 56,000*l.* The filtration area would consist of about 120 acres of land immediately below Ryton Bridge in the Avon Valley. . . . Your committee have adopted the recommendation of the sub-committee that Mr. Mansergh be instructed to prepare detailed plans and estimates for a scheme based on the doubling of the present tank capacity, and the acquisition of not less than 120 acres of land immediately below Ryton Bridge in the Avon Valley for the treatment of the effluent water, in order that application may be made in the next session of Parliament for the necessary powers for its execution."

Sanitation in Cornwall.—In his report for July, as Chairman of the Sanitary Committee of the Cornwall County Council, Mr. Silvanus Trevail says:—"It is satisfactory to find that a tender has been accepted for providing a water supply for Lostwithiel, that a loan has been sanctioned for a water supply to St. Austell, and also the long-looked-for sanction to the loan for furnishing the water supply for the Borough of Launceston. The carrying of this project to a successful issue, will mark one of the most important epochs in the history of the ancient capital of the county, and upon which both its Mayor and Corporation may be heartily congratulated. At Newquay the water supply to the low levels of the town is now reported as being adequate. Phillack Local Board appears to be still oblivious of the fact that one of the prime necessities of life is an adequate supply of pure water. The Medical Officer has reported that one of its public wells is worse contaminated than ever, and still the recommendation of the Local Government Board to the Local Board to call in an engineer is not attended to. Nothing has been done to improve the sanitary condition of Porthleven. Scarlet fever is again making its appearance there. Complaints continue to reach this committee of insanitary conditions at Dobwalls, especially in respect of an offensive slaughter-house, and also of very offensive tanneries at Grampound. . . Scarlet-fever cases have receded from 202 in June to 117 in July, but there has been increased fatality, and the disease is reported to be of a very malignant type at Buller's Hill, Redruth. There is still the usual complaint of want of isolation, and of the means of isolation. In only two districts in the county is the subject of isolation hospital accommodation apparently receiving serious attention."

Sewage Disposal and Electric Lighting, Monmouth.—At a recent special meeting of the Monmouth Town Council, the final report of Messrs. Bramwell & Harris, Westminster, on the combined schemes of sewage disposal and the electric lighting of the borough, was adopted. The cost is estimated to be about 17,600*l.*

FOREIGN AND COLONIAL.

France.—A great many architects have sent in their names as intending competitors for the 1900 Exhibition building, but unfortunately the list, so far, does not include any names well known in the architectural world.——The Chamber of Deputies has voted 45,000 francs for the installation at the Louvre of a splendid collection of Oriental ceramic work, including more that 3,000 pieces, and which was offered to the State by a learned collector, M. Grandidier, who devoted more than twenty years to the collection of curious and rare examples of Oriental china. The collection is valued at 1,600,000 francs.——A statue of the late President is to be erected at Molay, the cradle of the Carnot family. A monument to M. Carnot is also to be erected at Nice, on the Place Cassini.——At Roubaix there has been a public competition for a monument to the celebrated "chansonnier," Gustave Nadaud, which has been gained by M. Cordonnier, the sculptor. It will comprise a stone column surmounted by a bronze bust of Nadaud, along with two statues symbolising "Art" and "Liberty," and two bas-reliefs illustrating the principal works of the poet. The architectural portion has been confided to M. Lefebvre, architect, of Roubaix.——The church of Notre Dame at St. Dié (Vosges), one of the most ancient and interesting archæological monuments in the east of France, is threatened with a "complete restoration." It dates from the eleventh century, and is one of the best specimens of Romanesque architecture in the country. —— A bronze bust has been erected at Orange to the architect, Caristie, author of the plan of the theatre and the scheme for its restoration.——A bust of Cervantes has been put up in a grotto near Algiers, as a memorial of his captivity in that town.——M. Dalou, the eminent sculptor, has just completed the model of the monument to the late M. Alphand, which is to be placed in the square of the tower of St. Jacques la Boucherie, adjoining the Boulevard Sebastopol. The monument consists of a statue of Alphand, 3 mètres high, in the centre of a semi-circle of 15 mètres diameter. It will be surrounded with four figures representing Painting, Sculpture, Architecture, and Engineering.——The restoration is just completed of the Hôtel de Ville of Hesdin (Pas de Calais) the façade of which is decorated with the sculptured arms of Charles V. and those of the Maison de France. The restoration has been carried out under the direction of M. Normand.——M. Boussac has been commissioned by the Government to study and report on the monuments of the Pharaonic age in the Valley of the Nile.——The Paris, Lyons, and Mediterranean Railway Company is constructing a new terminus at Marseilles, which will be the finest station on its system. It was commenced eighteen months ago. The estimated cost is more than three million francs.——M. Léon Cugnot, the sculptor, has died at Paris at the age of fifty-nine. He obtained the Prix de Rome in 1859. He was a former pupil of Diebolt and Duret, and has left some remarkable works; among others "La Force et la Justice," which adorns the front of the Cour de Cassation; "Le Patriotisme," in the Salle des États of the Louvre, and the statues in the Salon des Caryatides at the Hôtel de Ville of Paris. He received medals in the Salons of 1863, 1865, and 1867; and the Legion of Honour in 1874.

Germany.—The competition for the design of the Bismarck Monument for Berlin has now been opened. The monument is to be in the form of a statue showing the ex-Chancellor in his "Kuerassier" uniform, and will have a prominent position in front of the new Houses of Parliament on the Koenigsplatz. While the material of the statue is to be bronze, the pediment can be of any material the artist may select. 4,000*l.* are to be given in premiums, the ten first having a value of 250*l.* each, the ten second prizes 100*l.* each, and the ten third 50*l.* Sending-in day is in June, 1895. There will be a committee of eight assessors, of whom three are architects.——The programme of the biennial gathering of our German *confrères* has now been published. The Congress will be opened on the 29th inst., with Herr Hinckeldeyn (Berlin) in the chair, and it will last until the 31st inst. There will be a number of interesting papers, and also some excursions. Strassburg itself has many interesting sights for an architect, whilst the battle-fields of the Franco-German war will be an attraction for every patriot.——The Prussian Board of Works Offices have been extended, the new wing costing the Government 25,000*l.* for the builders' work alone. The wing has a front to the Leipziger Strasse, which has been most elaborately treated in a freestone of unusually good colour.——A new bridge is to cross the Rhine at Bonn. It will cost about 150,000*l.*, and a competition has now been opened for the design. The premiums are 400*l.*, 300*l.*, 200*l.*, and 150*l.* respectively, and the work will be put before a committee of five assessors.——The Emperor has purchased a bust of himself in marble, by the late Professor Hoffmeister, now being exhibited at the Berlin Salon.——His Majesty has presented the German Archæological Institute at Rome with the means necessary for the publication of a comprehensive illustrated work on the column of Marcus Aurelius, which is covered by relief representations of battles with the ancient German tribes. The editors will be Professor Petersen, head of the German Archæological Institute at Rome, and Professor von Domaszewski, of Heidelburg.——The entrance hall of the new Imperial Assurance offices in the Kaiserin Augusta Strasse at Berlin is now complete; two life-size statues, representing the ironworking and building industries, have been placed on the stairway.——The Arts and Crafts Committee of the municipality has recommended a grant of 750*l.* towards purchases of exhibits at the proposed Arts and Crafts Exhibition in 1896. —— The Committee for the Schulz-Delitzsch monument has again met with a disappointment; this time the Hausvoigteiplatz has been denied them; some time ago, it will be remembered, their application for a site on the Alexanderplatz was refused.——The Imperial Canal Commission at Munster is investigating the feasibility of a connexion between the Dortmund-Ems canal and the river Ruhr.——The new operative theatre in the Surgical Schools at Heidelburg, built from designs by Herr Koch, has recently been opened. The theatre is decorated with busts of Chelius, Simon, and Weber, Professor Czerny's three predecessors. —— At the recent meeting of the "Kriegerbund," at Hanover, an appeal was made to the constituent societies for the remaining 15,000*l.* necessary for the Kyffhauser Emperor William Monument. ——Wittemberg is to have a statue in bronze of the late Emperor Frederick by Herr Hans Arnoldt, of Berlin. ——A Bismarck memorial fountain, from the designs of Professor Hildebrandt, of Rome, has been unveiled at Jena.——At a recent meeting of the Carlsruhe Antiquarian Society, Dr. Ernst Wagner lectured on the excavations carried out under his direction amongst the Roman remains near Wössingen, in Baden. The discoveries included a Roman cellar, containing vases and implements in iron and bronze, and a Roman country villa, of which parts of the walls are preserved. The latter are painted, and the frescoes, by the excellence of their execution, take a high rank amongst those hitherto discovered in South Germany. The absence of any further finds renders it likely that the settlement was abandoned, probably, to judge from a coin discovered, dating

from the reign of Septimius Severus, in the commencement of the third century.——Discoveries of Roman architectural remains have also been made at Blankenheim, in the Eifel mountains, where excavations were undertaken under the direction of the archæologist Könen.——An ancient tomb, 6 mètres in circumference, dating from the Stone Age, has been uncovered at Elisenlund, near Apenrade, on the Baltic coast, and restored by the Schleswig-Holstein Society for the Diffusion of Scientific Knowledge.

AUSTRIA.—The Budapest Congress promises us a most formidable list of papers, about 700 already being on the programme. The number of official representatives is also unusually great, some twenty-six Governments having sent together nearly one hundred *savants*. Over ninety local authorities will send delegates, and forty universities are sending members. As before said, there is much at Budapest to interest the architect and engineer, quite independent of the "Congress" lectures, and the opportunity is a good one to see something of Hungary.

BRICKS AND TILES IN INDIA.—According to a recent report of the United States Consul at Bombay upon the manufactures of Western India, as a rule bricks are hand-moulded throughout India, few factories having the appliances for making bricks by machinery. The tile most in use is of native design and manufacture. A tube of clay is spun by hand on a very simple wheel made of wood, and balanced and loaded with clay. It turns on a peg like a top, and having been set in rapid rotation, it revolves long enough for the operation. The tube, which is tapering in form and about 1 ft. long by 4½ in. wide, is split by a piece of string into halves, which, when dried and burned, become the country tiles of India. One layer with edges up and one layer with edges down is what is termed a single tiling, and twice the quantity is double tiling. No fastenings are used, there being only one support at the eaves of the roof to prevent them from slipping off. They are repaired once a year before the rainy season. In large towns the European pattern of tile is coming into vogue. The greater number of European tile factories in India are in Malabar and South Canara, where water-carriage along the coast affords a cheap means of transportation. The factories are closed during the rainy season. Tiles have been made in Bombay with clay from South Canara, the clay costing less for transportation than tiles, and there being no loss by damage. Coal was also cheaper at the port of arrival, and it was possible to keep the work going all the year round, owing to the smaller rainfall at Bombay, but the work was undertaken by inexperienced people, and did not succeed.

MISCELLANEOUS.

FORTHCOMING ART EXHIBITION AT ABERDEEN.—The Aberdeen Artists' Society have made arrangements to hold their seventh annual exhibition in the Art Gallery in the beginning of October. All works for the exhibition have to be delivered not later than September 17. The Society has 500 subscribers, and it is stated that the financial success of the exhibition is already assured. An Art Union has also been formed in connexion with the Society.

LEICESTERSHIRE TRADES AND INDUSTRIAL EXHIBITION.—Under the auspices of the Trades Exhibition Company, there will be held in the Floral Hall, Leicester, from September 29 to November 3, an exhibition similar to those which have been promoted by this company in Plymouth, Derby, Sheffield, and Wolverhampton. Exhibits will be received at the Hall on September 25, and perhaps earlier, by special arrangement. There will be no fewer than seventeen sections, and all will be under the personal management of Mr. George Stanley,

BERKS ARCHÆOLOGICAL AND ARCHITECTURAL SOCIETY.—On the 15th inst. the members and friends of this Association had an excursion to Ruscombe, Waltham St. Lawrence, Shottesbrook and White Waltham, the churches at each place being visited. Ruscombe Church was first visited, and the Rev. J. Henly, the vicar, conducted the party over the edifice, which is dedicated to St. James the Great. Mr. Henly pointed out the older portions of the church, including indications of the twelfth-century work in the chancel, after which the Rev. J. M. Guilding made some remarks, in the course of which he said the church probably was one of the earliest Christian stations in Wessex, belonging at one time to the Bishopric of Sonning. The modern portion of the church showed the great revival of Church life in England after the accession of Charles I. Waltham St. Lawrence Church was next visited, and its principal objects of interest were described by the Rev. G. Neville, the vicar, who said that the lower part of the nave was the oldest portion of the church, the arches probably being of the eleventh or twelfth century work. The tower seemed to have been built in the fourteenth century, and the large window about 1350. The transepts were very old. The top of the tower and parapet were rebuilt probably two hundred and sixty years ago, the work now proceeding in the tower having been necessitated by the ravages made by the weather. There were remains of flat lead-work, showing that at some time a spire was in existence. At the north-east end of the church was the family vault of the Nevilles of Billingbear. The communion-plate, some fine old woodwork, and the well-preserved carving found in the old church and placed at the back of the pulpit were shown. A drive brought the visitors to Shottesbrook Church, where Mr. W. Ravenscroft, F.S.A., described the chief characteristics. The Hall having been visited, a short visit was afterwards paid to White Waltham Church.

THE LAING WHARTON AND DOWN CONSTRUCTION Syndicate, Limited, having purchased all the patents, rights, and privileges of the Thomson-Houston system of electric lighting, traction, and power transmission in the United Kingdom of Great Britain and Ireland and the British Possessions in Europe, will, we are informed, in future manufacture its apparatus in England. The Thomson-Houston Company having taken a material interest in the company, the Laing Wharton and Down Construction Syndicate, Limited, with the sanction of the Board of Trade, has changed its name to that of "British Thomson-Houston, Limited," under which style it will do business in future.

IMPROVEMENT OF AN UNHEALTHY AREA IN ABERDEEN.—Following on complaints from certain ratepayers, the Medical Officer of Health for Aberdeen (Professor Matthew Hay) has made a representation that the area on the opposite side of the ancient market-place of the city from the Municipal Buildings—viz., that lying between Nos. 55 and 56, Castle-street, on the east, Castle-street and Exchequer-row on the north, Ship-row (to No. 31 inclusive) on the west, and the open ground in the middle of the said area on the south, is, in his opinion, an unhealthy area, within the meaning of the Housing of the Working Classes Act, 1890, and that the evils connected with the houses, courts, or alleys within the unhealthy area, and the sanitary defects in such area, cannot be effectually remedied otherwise than by an improvement scheme under the statute. Dr. Hay states that the area measures nearly two-thirds of an acre, and that in the ninety-eight dwelling-houses, one house let in lodgings, and five common lodging-houses included in these slums, there is a population of 508, giving only 6·3 square yards to each person. The death-rate in the area is high, the impure air facilitating the spread of infectious diseases; many of the houses are old and dilapidated, and the great overcrowding and bad arrangement of buildings render it impossible to adequately light and ventilate individual dwelling-houses, and leaving insufficient space for the provision of the necessary sanitary conveniences. The total annual rental of the property is 1,121*l.* odd, and of the occupied dwelling-houses thirty-nine are one-roomed and forty-three two-roomed. There are also thirteen shops and stores and two offices in occupation. The Town Council has resolved to carry out an improvement scheme under Part I. of the statute in question, and to petition the Secretary for Scotland to confirm a provisional order accordingly. The details of the scheme are not all adjusted, but the general idea is for the Town Council to acquire the ground and property under the Act, to remove all but the larger buildings on the margin, to erect a public lavatory, and to provide a terraced open space and a children's playground—the site being in the heart of the East-end. The total cost is estimated at 32,000*l.*, but the properties left will yield an annual rental of 910*l.*, and the statute confers borrowing and rating powers for any deficiency.

INDEPENDENT CARPENTERS' AND JOINERS' SOCIETY.—A branch of this society was opened at the Spread Eagle, Usk-road, Battersea, on the 4th inst. The secretary (Mr. Wheeler), in opening the branch, said its object was to form a society of carpenters and joiners to work without the federation ticket, and to allow a man to be free and independent as regards the time he should work, without being dictated to by the advocates of the eight hour movement. He went on to say that they were but young in the field, having been established only about three months; but they were in a fair way of prosperity, and several applications had been received from different parts of London to open other branches. After the officers had been enrolled, twenty-eight nominations were given in. After the lodge was closed, Mr. Osborn, the secretary of the Independent Bricklayers' Society, said it was their intention to open a lodge somewhere near Clapham Junction within a short time.

WATER ANALYSIS.—In the report for the month ending July 31, on the composition and quality of daily samples of the water supplied to London, by Mr. W. Crookes, F.R.S., and Professor Dewar, F.R.S., the following paragraph occurs:—"Owing to an unexpected coincidence between the results of analyses of two of the waters, and the repetition of this coincidence for several months past, the conviction has been forced upon us that the samples of water collected for us and presumed to be respectively from the New River and Chelsea mains were, through some systematic error, really the same water. This has now been confirmed by tracing the origin of the samples, which turn out to have been drawn from standpipes, supposed to be supplied by the different companies, but really both supplied by the New River Company. Steps have now been taken which will render such a mistake impossible in the future. Although this erroneous labelling is most unfortunate, it is not altogether to be regretted, as it explains the apparent discrepancy between Dr. Frankland's and our figures in regard to these two supplies, and moreover it gives, indirectly, a confirmatory proof of the extreme accuracy to which water analysis has been brought, and the complete trustworthiness of our own analytical results."

LEGAL.

PARTY-WALLS AT DENMARK HILL.

IN the Vacation Court on the 15th inst. the case of Sloman *v.* Mulholland came before Mr. Justice Romer, it being a motion to restrain the defendant from trespassing on the plaintiff's ground by the erection of a wall which the defendant had been running up by the side of the plaintiff's premises, until the trial of the action.

The counsel for the plaintiff said that his client was the owner of certain premises at Denmark Hill, under a long lease. The wall in question was a wall to support a theatre, which was being built by the side of the plaintiff's premises. The property had all been laid out in building-plots, and the plaintiff took his premises on the understanding that the adjoining land would be laid out in the same way. His contention was that the defendant, with full notice of the plaintiff's rights, and after taking certain preliminary steps to conform to those rights, had trespassed upon them by erecting a wall, partly on his own land and partly on the plaintiff's. The defendant said that it was absolutely essential that his theatre should be supported by the wall, and had served the plaintiff with a party-wall notice under the Metropolitan Buildings Act.

Mr. Justice Romer: Does he admit that it is on your land?

The learned counsel replied that he thought the defendant did. What he (defendant) said was that he had proceeded under the Metropolitan Buildings Act.

Mr. Justice Romer: Was there a wall there before?

The learned counsel replied in the affirmative.

Mr. Justice Romer: I think there is a very nice question to be tried, and I won't do it.

The learned counsel said that there were two questions to be tried, and one was as to blocking out the plaintiff's lights. That was a very nice question to be tried.

Mr. Justice Romer: Well, they can be tried together. I won't do it. Do you think I am going to try that now on motion?

The learned counsel replied that the trespass was not disputed.

Mr. Justice Romer: I am not so sure of that. I am not going to decide whether the defendant is entitled to do what he has done under the Metropolitan Buildings Act on motion.

After some further discussion, it was arranged that the motion should stand till the trial.

CAPITAL AND LABOUR.

STATE OF EMPLOYMENT IN JULY.—According to the *Labour Gazette*, the labour market during July continued on the whole to show a downward tendency. Fifty-two Trade Unions, with an aggregate membership of 358,565, have made returns to the Department, showing the total number of unemployed members at the end of July to be 26,576, or 7·4 per cent., compared with 6·3 per cent. for June, and 6·2 per cent. in societies making returns for July, 1893. On the whole, the building trade remains almost stationary, though in certain districts there is a good demand for men. The plumbing and painting branches show a decline. The percentage of unemployed members in unions making returns is 3·6, compared with 3·5 at the end of June. Sixteen disputes took place in the trade during the month, seven of which were due to demands for increased wages and for improved working rules, three to demarcation of work, and the remaining six to questions of unionism and working arrangements.

MEETINGS.

SATURDAY, AUGUST 25.

Liverpool Engineering Society.—Excursion to the Wirral Railway Works and Dee Bridge.

Glasgow Architectural Association.—Visit to New Craig House, M'Ewan Hall, and University Union, Edinburgh.

SATURDAY, SEPTEMBER 1.

A.A. Camera Club.—Visit to Ely Cathedral.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

AUGUST 14.—By *Elliott, Son & Boyton:* 3, Belsize-grove, Hampstead, u.t. 68 yrs., g.r. 30*l.*, 2,100*l.*; 98,

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered.
*New Schools	Dudley School Board	.....	Oct. 1
School Buildings	Morley (Yorks.) School Board	..... do.	
County Offices	Durham C. C.	200*l.* 100*l.*	Nov. 30
*Museum for Antiquities, Cairo	Egyptian Government	First 600*l.* and 400*l.* between the next four	Mar. 1, '95
*New Building, Exeter	W. of E. Eye Infirmary	.....	No date

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered
Alterations, &c. to Church of St. Martin, Brighouse	.....	W. S. Barber	Aug. 28
Five Houses, Senior-lane, Royston, near Barnsley	.....	J. W. Wilson	do.
Alterations, &c. to Market Hall	Burton-upon-Trent Corporation	J. E. Swindlehurst	do.
Residence and Dispensary, Runiscrone, Ireland	Dromore West Union	J. Hampden Shaw	do.
Storm-water Sewer, Mason and Leicester-streets	Horwich (Lancs.) L. B.	J. E. Jackson	do.
Stone Kerbing, &c. (1,121 yds.)	Gildersome (Yorks) L. B.	*Official*	do.
Schools, Wintringham	Great Grimsby Sch. B.	H. C. Scaping	Aug. 29
Offices, Mill Farm, Potterton, near Aberdeen	Messrs. Collie	.....	do.
Roads and Sewers, Roath Park, Cardiff	.....	Edwin Seward	do.
*Stoneware Pipe Sewers, &c.	Poole, U.S.A.	J. Elford & J. Lemon	do.
House, Hagget End Farm, Egremont, Cumberland	S. & J. Lindlow	.....	Aug. 30
Two Houses, Halifax	.....	Medley Hall	do.
Sewerage Works, &c. Farlington	Easingwold R.S.A.	*Official*	do.
Schools, Winshill	Burton-upon-Trent School Board	R. Churchill	Aug. 31
Mill, New Harbour, Carnarvon	.....	E. Evans	do.
Road Works, Broad-street, Leek, Staffs.	.....	Jas. G. Smith	do.
Additions, &c. to Mining School, Camborne, Cornwall	T. H. Robinson	.....	do.
Waterworks, Sandbach	Congleton R.S.A.	W. Wyatt	Sept. 1
Road Materials	Norwich Corporation	A. E. Collins	Sept. 3
Additional Wards	Bradford General Infirmary	Milnes & France	do.
Hotel, Burnt Bridge, Pannal, Harrogate	Mrs. Trees	Thos. Winn	do.
Farm and House, Earlsheaton	Dewsbury Corporation	*Official*	do.
*Outfall Sewerage Works	Marple Local Board	H. Bancroft	do.
*Iron and Stoneware Pipe Sewers, &c.	do.	do.	do.

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
Schools, Hale	Farnham School Bd.	J. A. Eggar	Sept. 4
Alterations, &c. to Presbyterian Church, Loughaghry, Belfast	.....	Wm. Batt	Sept. 5
Pipe Sewer, Canal Bank, Monton	Eccles Corp.	A. C. Turley	do,
Flagging, Kerbing, &c. Stanley-avenue	do.	do.	do,
*Sewerage Outfall Works	Midsomer Norton L. B.	C. N. Lailey	do,
*Tar Paving and Brick Edging, Cave Hill	Met. Asylums Board.	*Official*	do,
*Making-up and Paving Road	Walthamstow Loc. Bd.	G. W. Holmes	Sept. 7
*Oak Park Fencing	do.	do.	do.
*Board Schools, &c. Llanrwst	Llanrwst Sch. Bd.	R. Grierson	do.
Additions, &c. to Royal High School	Edinburgh Sch. Bd.	*Official*	Sept. 9
Schools, &c. Garn, Wales	Penmorfa U.D. Sch. B.	do.	Sept. 10
Golf Pavilion, Meyrick Park	Bournemouth T. C.	F. W. Lacy	do,
Restoration of Church, Beguildy, Radnorshire	.....	W. R. Bryden	do,
*Broken Granite and Flints	Barking Town Lc. Bd.	C. J. Dawson	Sept. 11
Schools, Newbold Moor, near Chesterfield	Newbold & Dunston School Board	J. W. Fearn	do,
*Doctors' House and Nurses' Quarters	Chelsea Guardians	Lansdell & Harrison	do.
Brick and Pipe Sewers	Cambridge Corporation	J. T. Wood	Sept. 14
*Fire Hydrants and Covers	Hornsey Local Board	*Official*	Sept. 17
Four Shops, &c. Oxford-street, Grimsby	.....	David Pick	No date
Additions, &c. to Working Men's Club, Dewsbury	Committee	Holtom & Fox	do.
Houses, Ilkley	.....	Isitt & Adkin	do,
Villa Residence, Park Crescent, Ilkeston	.....	Saml. Richards	do,
Dairy Institute, Gyppeswyk Park, Ipswich	Eastern Counties' Dairy Institute, Limited	Eade & Johns	do,
Eight Cottages, Kiveton Park, Sheffield	Mrs. Trueman	.....	do,
Church of Holy Trinity, Torquay	.....	Jno. Watson	do,
Stable, &c. Trewynte, Llanfihangel, Wales	Saml. Howells	.....	do,
*Residence for Women Students, Aberystwyth	University College of Wales	C. J. Ferguson	do,

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Sculpture and Modelling Instructor	Liverpool School of Architecture	250*l.* &c.	Sept. 8
*Decorative and Figure Painting Instructor	do.	150*l.* &c.	do.
*Draughtsman (Admiralty Outposts)	Civil Service Com.	.....	Sept. 15
*Art Master	Northampton Art Sch.	180*l.*	No date
*Honorary Architect	St. John's Hospital Skin Diseases	.....	do.

Those marked with an asterisk (*) are advertised in this Number. *Competitions, p.* iv. *Contracts, pp.* iv., vi., *and* viii. *Public Appointments, pp.* xxi. *and* xxii.

Great Portland-st., Portland Estate, u.t. 3 yrs., g.r. 28*l.*, r. 108*l.*, 220*l.*—By *E. & H. Lumley*: The residence "Steephill," Wimbledon, 1 a. 2 r. 23 p.; a plot of land, 1 a. 0 r. 6 p.; and f.g.r. of 46*l.*, with reversion in 53 yrs., 9,100*l.*—By *Debenham, Tewson & Co.*: "Reed Court" and farm, Strood, Kent, 39 a. 0 r. 28 p., r. 275*l.*, 5,000*l.*; 89 to 95 (odd), Beaufort-st., Chelsea; and 48, 49, Camera-sq., u.t. 4 yrs., g.r. 14*l.* 10s., 225*l.*

AUGUST 15.—By *Fuller & Fuller*: 35, Leyton-rd., Stratford, u.t. 66 yrs., g.r. 7*l.*, r. 40*l.*, 300*l.*; 39 to 45 (odd), Leyton-rd.; and 1, 3, 5, Alma-rd., u.t. 62 yrs., g.r. 20*l.*, r. 131*l.* 12s., 960*l.*

AUGUST 16.—By *Battam & Co.*: F.g.r. of 60*l.*, Maiden Lane, Strand, reversion in 67 yrs., 2,050*l.*; f.g.r. of 35*l.*, Leicester-sq., ditto in 81 yrs., 1,170*l.*

AUGUST 17.—By *Ramsey & Co.*: 8 to 14 (even), Oareboro-rd., Deptford, u.t. 72 yrs., g.r. 12*l.*, 405*l.*—By *H. Hibbard*: 3, Victoria-ter., Worthing, f., r. 65*l.*, 800*l.*

[*Contractions used in these Lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.]

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

17,214.—TILE-MAKING MACHINERY: *R. Stanley.*—The specification describes machinery for moulding and pressing tiles, and is designed to prevent the edges or arrises of the tiles from being chipped and broken. The edges are made harder and denser than the rest of the tile; the clay being used in a semi-dry condition and under strong compression.

17,227.—PLANES: *L. J. Forsberg.*—This patent relates to an improvement on American planes by fixing lugs, cutters, and guides, and forming the face of a single sheet of metal. The cutter is also adjustable up and down at right-angles to the face.

17,322.—ARTIFICIAL STONE: *A. McLean and another.*—To carry out further the movement for the destruction of refuse by fire it is here proposed to convert clinkers by this process into an artificial stone. The clinker is broken up to powder, mixed with Portland cement, and moulded under great pressure.

17,411.—DECORATIVE MATERIAL: *W. S. Morton.*—According to this invention a woven fabric has a paper backing, and a varnished coating to form strips of material for use in decorating walls, ceilings, floors, &c.

21,687.—DRAIN TRAPS: *E. A. Green.*—The traps of vitrified and glazed stoneware are designed in special forms to prevent the stoppage of the same, and with peculiar conformations of the channels to prevent the soil lodging in them.

23,230.—CONCRETE WALLS: *J. W. Cockrill and another.*—This invention for the construction of concrete walls without the aid of framing or special plant, and for lining or facing such walls has for its object to build up cheaply a wall that shall be strong, durable, and neat in appearance. It consists essentially in forming the main body or mass of the wall of concrete and the exposed faces of the wall of glazed tiles having projections bedded into the concrete. The tiled faces of the wall present a neat appearance, and when light-coloured and glazed they are very light for passages, tunnels, &c., and serve to protect the wall from the effects of the weather. The projections prevent the tiles from being detached from the wall, with which they are practically solid.

23,317.—IMPROVEMENTS IN WATER-CLOSETS: *W. Bartholomew.*—To increase the depth of water in the pan and to ensure an effectual discharge of its contents modifications and additions to the usual mechanism are introduced.

6,605.—WINDOWS: *R. Pennington.*—According to this invention the upper and lower sashes are connected by cords. The window-frames are specially constructed with grooves, &c., and may be fastened in the walls without any special recesses or such like provision. The sashes are balanced, and opening or closing one also actuates the other.

NEW APPLICATIONS FOR LETTERS PATENT.

AUGUST 7.—15,094, A. Hilwig, Closed Arrangements for Gates and Doors.—15,102, R. Hadden, Chimney Cowls.

AUGUST 8.—15,118, R. Gough, Locking Window-fasteners.—15,123, W. Peyton, Chimney Pot and Ventilator.—15,149, L. Robson, Windows.—15,175, M. Bohn, Roofing Tiles.

AUGUST 9.—15,241, E. Andrews, Window-sashes.

AUGUST 10.—15,251, W. Priest, Manufacture of White Lead.—15,260, A. Rösle, Cutting the Teeth of Saws, &c.—15,266, E. Van Den Hoff, Manufacture of White Lead.—15,302, O. Elphick, Water-closets.

AUGUST 11.—15,330, W. Nicol, Sash-frames of Windows.—15,332, W. Bailey, Mitre-cutting and Shooting Block.

PROVISIONAL SPECIFICATIONS ACCEPTED.

11,427, J. O'Connell and B. Hillery, Lime Kilns.—13,127, C. Righini, Flushing Water-closets.—13,292, T. Twyford, Water-closets.—13,383, J. Rogers, Syphon Cisterns.—13,945, E. Barger, Producing the Circulation of Air in Heating and Ventilating Systems, &c.—18,459, D. Keith, Window-sash Frames.

COMPLETE SPECIFICATIONS ACCEPTED.

(Open to Opposition for Two Months.)

18,719, T. & J. Witter, Protecting Buildings.—18,896, J. Duckett & Son, Limited, and J. Duckett, Intercepting Traps, &c.—20,056, R. Harry, Window Silencers.—1,494, F. Weiss, Fastenings for Doors, &c.—11,583, G. Müller, Window Opening and Closing Apparatus.—13,401, C. Hitchcock, Apparatus to be inserted in Chimneys, &c., for providing an Ascending Current of Air to carry off the Smoke from Domestic Fires and to Prevent Down Draught.

PRICES CURRENT OF MATERIALS.

TIMBER.

Greenheart, B.G.		
ton	8/0/0	0/0/0
Teak, E.I. .. load	10/0/0	16 0/0
Sequoia, U.S.ft.cu	2/3	2/6
Ash, Canada load	2/15/0	4/0/0
Birch, do.	2/10/0	3/15 0
Elm, do.	3/10/0	4/15/0
Fir, Dantsic, &c.	1/5/0	3/0/0
Oak, do.	2/10/0	4/10/0
Canada	6/0/0	7/10/0
Pine, Canada red	2/15/0	3/5/0
Do. Yellow	2/15/0	5/0/0
Lath, Dantsic, fath	4/10/0	5/10/0
St. Petersburg	5/0/0	6/10/0
Wainscot, Riga, &c., log	2/10/0	4/15 0
Odessa, crown	2/10/0	4/15/0
Deals, Finland		
2nd & 1st std 100	7/15/0	9/10/0
Do. 4th & 3rd	7/0/0	8/10/0
Do. Riga	7/10/0	9/0/0
St. Petersburg, 1st yellow	10/c/0	13/10/0
Do. 2nd yellow	8/10/0	10/5/0
Do. white	8/10/0	11/0/0
Swedish	7/10/0	16 10/0
White Sea	7/0/0	15 10/0
Canada, Pine 1st	22/10/0	29/0/0
Do. do. 2nd	17/0/0	18/0/0
Do. do. 3rd, &c.	7/10/0	10/10/0
Do. Spruce, 1st	8 10/0	11/0/0
Do. do. 3rd & 2nd	6/10/0	7/10/0
New Brunswick	6/0/0	7/5/0
Battens, all kinds	9/0/0	15/0/0
Flooring boards, sq., 1 in. prep.		
1st	0/9 6	0/14 6
Do. 2nd	0/7/0	0/11/6
Other qualities—	0/5/0	0/6 6
Cedar, Cuba .. ft.	3½	4½
Honduras, &c.	3½	4½
Mahogany, Cuba	5½	/6
St. Domingo, cargo av.	/3	1/6
Mexican do. do.	/3	/4
Tobasco do. do.	/3½	/6
Honduras do.	/3½	/5½
Box, Turkey ton	4/0/0	13/0/0
Rose, Rio	7/0/0	18/0/0
Bahia	6/0/0	27/0/0
Satin, St. Domingo	0/0/5	0/2/0

TIMBER (*continued*).

Satin, Forto Rico	0/0/6	0/1/8
Walnut, Italian	0/0/3½	0/0/7

METALS.

Iron—Pig, in Scotland ton	2 3 4	0/0/0
Bar, Welsh, in London	5/12 6	5/15/0
Do. do. at works in Wales	5/2/6	5/5/0
Do. Staffordshire, in London	6/0/0	6/10/0
COPPER—British cake and ingot	42/0/0	42 10/0
Best selected	43/0/0	43 10/0
Sheets, strong	51/0/0	0/0/0
Chill. bars	40/2 6	40/7 6
YELLOW METAL lb	0/0/4	0/0/4½
LEAD—Pig, Spanish ton	13/0/0	10/2 6
English com. brands	12 2 6	10/5/0
Sheet, English, 6 lbs. per sq. ft. and upwards	10/15/0	0/0/0
Pipe	11/5/0	0/0/0
ZINC—English sheet ton	19/0/0	19/0/0
Vieille Montagne	19/10/0	0/0/0
TIN—Straits	71/7/6	71/7/6
Australian	71/17/6	72/2/6
English Ingots	71/10/0	72/0/0
Banca	68 0/0	68/10/0
Billiton	67/0/0	67/10/0

OILS.

Linseed ton	20/5/0	20/12/6
Cocoanut, Cochin	29/15/0	32/0/0
Do. Ceylon	24 5 0	0/0/0
Palm, Lagos	13 0/0	0/0/0
Rapeseed, English pale	21/15 0	0/0/0
Do. brown	22/0/0	0/0/0
Cottonseed ref.	20/10/0	21/5/0
Oleine	22/0/0	24/0/0
Lubricating, U.S.	4/0/0	5/0/0
Do. refined	5/0/0	12 0/0
TAR—Stockholm barrel	0/30/0	0/0/0
Archangel	0/11/0	0/0/0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursday.*]

AYLESBURY.—For the erection of proposed public baths, Bourbon-street, Aylesbury, for the Aylesbury Local Board of Health. Mr. Guest Luckett, architect, Virginian Cottage, Aylesbury:—

W. Lee	£2,950	G. Gibson	£2,440
A. Groves	2,896	C. Hunt	2,395
H. & C. Burden	2,780	H. Hill	2,295
W. Abbott & Son	2,780	T. Grimsdale	2,200
J. S. Kimberley	2,676	J. Wallis & Sons	2,040
G. Darlington	2,660	H. Fincher and Son	2,000
H. Sherwin	2,545	W. Slarey (accepted)	1,980

ABERDARE.—For the erection of a church at Llwydcoed. Mr. G. Halliday, architect, 14, High-street, Cardiff:—

Williams	£1,150	Williams & Thomas, Cardiff*	£975
Bennett Bros.	1,070	Howell & Co.	904
Hatherley & Carr	999		

* Accepted.

[Architect's Estimate £1,000.]

ALDEBURGH (Suffolk).—For additions, &c., to house, and converting same into police-station, for the East Suffolk County Council. Mr. H. Miller, C.E., County Surveyor, 16, Museum-street, Ipswich. Quantities by the architect:—

Stannard	£296 10 0	Cooper & Son, Aldeburgh (accepted)	£229 12 5
Carter	236 0 0		

AYLESBURY.—Accepted for the erection of two cottages, Albion-street, Aylesbury, for Mr. D. Titmuss, Luton, Beds. Mr. Geest Luckett, architect, Virginian Cottage, Aylesbury:—

Jewell (no competition) £318

BARROW-ON-SOAR (Leics.).—For the construction of sewerage works and pumping station for the Rural Sanitary Authority. Mr. Cecil Ogden, Engineer, 4, Welford-place, Leicester. Quantities by the Engineer:—

Philbrick	£6,687 0	Bentley	£5,869 0
Smart	6,038 10	Mason	5,774 0
Wright	6,019 0	Thumbs, Nottingham *	5,735 5

* Accepted.

[Engineer's estimate, £5,700.]

BUCKSHAW (Dorset).—Accepted for new hunting-stables at Buckshaw, Dorset, for Col. the Hon. Everard Digby. Mr. J. Feacey, architect:—

Messrs. Rendell & Co., Dorchester £1,100

CARDIFF.—Accepted for the construction of roads, sewers, &c., Ty-yn-y-Coed, for Mrs. Mackintosh of Mackintosh. Mr. Charles Rigg, surveyor, Albert Chambers, High-street, Cardiff. Quantities by surveyor:—

George Beames, Cardiff £2,175

[Twelve tenders received.]

CARDIFF.—For the reconstruction of the baths, Guildford-crescent, for the Corporation. Mr. W. Harpur, C.E., Borough Engineer, Town Hall, Cardiff. Quantities by the Engineer:—

W. Thomas & Co.	£14,550 1 2	Turner & Co.	13,288 0 0
Shepton & Son	14,526 11 7	J. Thomas	12,965 0 0
H. Gibbon	14,504 16 4	H. Davies	12,641 4 4
Jones Bros.	13,550 0 0	David Davies	12,641 0 0
Lattey & Co.	13,450 0 0	J. Allan	12,411 0 0
J. Gibson	13,307 12 6	Symonds & Co. *	12,359 19 3

[All of Cardiff.]

*Accepted.

CHIPPING BARNET (Herts.).—For the re-seating in carved oak of the nave and aisles of the parish church of St. John Baptist, for the Barnet Chancel Estate Trustees. Mr. T. C. Traylen, architect, Broad-street, Stamford:—

T. Thompson	£1,892 0	Harry Hems & Sons, Exeter (accepted)	£1,525 4
A. Robinson	1,840 0		

CROOK (Durham).—Accepted for additions to schools, Pease's West Board Schools. Mr. H. T. Gradon, architect, Durham:—

Slater.—J. Wylie, South Shields £103 0 0
Painter.—R. Thompson, Bishop Auckland 23 15 0
Other Trades.—J. J. Craman, Willington 1,097 19 0

CRICKLADE.—Accepted for re-building the Congregational Sunday School. Mr. William Drew, architect, Swindon:—

T. Colborne, New Swindon £124

DARWEN (Lancs.).—Accepted for the erection of villa residence, outbuildings, &c., Whitehall, Darwen, for Mr. J. J. Riley. Mr. John R. Thomley, architect, 45, Market-street, Darwen. Quantities by the architect:—

Mason, Joiner, and Slater.—Lloyd & Millward
Plasterer and Painter.—R. T. Lomax
Plumber and Glazier.—R. Entwistle
Iron Railing.—Entwistle & Nutter
} £985 10

[All of Darwen.]

DORCHESTER.—Accepted for the erection of class-room, offices, &c., Stinsford and Bockhampton School, for the managers. Mr. J. Feacey, architect, South Walks, Dorchester:—

P. Barrett & Son, Dorchester £299 16 0

DORCHESTER.—Accepted for additions to house in the West Walks, Dorchester, for Dr. Fisher. Mr. J. Feacey, architect:—

J. Guy & Son, Dorchester £320 0 0

DORCHESTER.—Accepted for new road from the Icen Way to Fordington Green, Dorchester, for Mr. E. B. Duke. Mr. J. Feacey, architect:—

Messrs. Jesty & Son, Weymouth £250

DORCHESTER.—Accepted for extension of the coal-sheds at the Dorchester Gas Works, for the company. Mr. J. Feacey, architect:—

Messrs. P. Barrett & Son, Dorchester £327

DURHAM.—Accepted for two houses, the Avenue, Durham. Mr. H. T. Gradon, architect:—

Joiner.—G. T. Manners, Durham £280 0 0
Plumbers.—Heron & Brown 100 11 10
Other Trades.—Rhodes & Son, Neville's Cross 559 5 11½

DURHAM.—Accepted for the erection of wash-house, laundry, mortuary, &c., at the workhouse, Sedgefield, for the Union Guardians. Mr. H. T. Gradon, architect, Market-place, Durham:—

W. C. Atkinson, Stockton £1,034 5 6

EARL'S BARTON (Northampton).—For the erection of a boot and shoe factory, for Mr. A. Harker. Messrs. Mosley & Anderson, architects and surveyors, Goodyear Chambers, Northampton. Quantities by architects.

A. B. Clarke	£335 0	Sparrow	£318 0
W. Gregory & Son	334 0	T. & C. Berrill	292 0
J. Garrett	329 14	F. Johnson & Son, Earl's Barton (accepted)	287 6
C. Henson	320 0		
Wilford & Judkin	318 10		

EAST BARNET (Herts.).—For alterations and repairs to Bedford House, for Mr. Philpots. Mr. E. Fergusson Taylor, surveyor, 70-72, Chancery-lane, W.C.:—

F. Voller	£323 0	W. Hagger *	£250 10
G. Daniels	290 0		

* Accepted provisionally.

EAST LEMINGTON.—For relaying sewers at East Lemington, for the Newburn District Local Board. Mr. H. W. Taylor, Surveyor, Local Board Offices, Newburn-on-Tyne. Quantities by Surveyor:—

E. Keegan	£202 5 6	Babe & Appleby, Ryton-on-Tyne *	£124 11 6
Nicholson & Elliott	165 10 9		
W. Adamson	146 0 0		

* Accepted.

[Surveyor's estimate, £135.]

GRAVESEND.—For alterations at the "New Tivoli Theatre," Harmer-street, Gravesend, for Mr. A Thiodon. Messrs. Clark & Hutchinson, architects, 28, John-street, Bedford Row, W.C., and 57, Strand, W.C. Quantities supplied.

Edwards & Graham	£960	Thos. Callund & Son	£730
Edwards & Medway	827	Multon & Wallis	729
W. H. Archer	746	J. G. Naylar & Son	698
W. Tuffee	739		

HAMPTON WICK.—For new cellar and alterations at "Ye Olde King's Head," Hampton Wick, Middlesex, for Hodgson's Kingston Brewery Company. Mr. W. Yetts, architect, Finsbury Pavement:—

Wheatley £134 10
Constable, Hampton Wick (accepted) 118 0

IPSWICH.—For additions to the laundry at the Borough Asylum. Mr. E. Buckham, Borough Surveyor, Town Hall, Ipswich. Quantities by Mr. H. Miller, M.I.C.E., Ipswich:—

		If covered-way omitted, deduct
Parkington & Son	£799 0 0	£153 0 0
Seammen & Berry	786 2 6	141 9 6
Charles Borrett	770 0 0	75 0 0
Girling & Coe, Ipswich*	695 0 0	120 0 0

* Accepted.

KEMNAY (N.B.).—For additions to the public school, near Aberdeen. Mr. J. J. Duncan, architect, Kemnay:—

Mason work.

Alexander & Davidson	£153	John Smith	£145
William Lander	147	L. Winnie, Clunlf*	120

Carpenter work, exclusive of desks, &c.

Bruce & Chalmers	£78 14 0	William Wright, Bridge, Alford*	£72 10 6
Alexander Bruce	78 10 0		

Slater work.

George Mitchell	£30 12	William Auld, Kemnay*	£29 16

Plaster work.

James Sivewright	£17 0	Robert Moir, Inverurie	£16 19

* Accepted.

LEEDS.—Accepted for the erection of a Wesleyan chapel, school, &c., Arthington. Mr. W. H. Beevers, architect, 25, Bond-street, Leeds:—

Masons and Joiners.—Rhodes Bros., Shipley £1,058 0
Plasterer.—J. Wilks & Son, Baildon 58 17
Slater.—W. Atkinson, Leeds 68 3
Painter.—E. W. Walker, Idle, near Leeds 16 0

LONDON.—For alterations and repairs to St. Botolph's Vicarage, No. 7, The Crescent, Minories, for the Rev. R. H. Haddon. Messrs. Gordon M. Hills & Son, architects. Quantities by Mr. Charles W. Bassett Smith:—

Green	£2,376 0 0	Ashby & Horner	£1,996 0 0
Lawrance & Son	2,073 0 0	Hocking	1,971 16 5
Andrew & Hanson	2,028 0 0	Calnan & Co.	1,801 0 0
S. Hunt	1,997 10 0		

LONDON.—For paving with compressed asphalte the carriageway of Thornhill-road, for the Vestry of St. Mary, Islington. Mr. J. Patten Barber, Chief Surveyor:—

Wm. Griffiths	£3,245 7 6
Val de Travers Asphalte Co.	3,162 10 10
Limmer Asphalte Paving Co.	3,121 2 6
The French Asphalte Co., Suffolk House, Laurence Pountney Hill, E.C. (accepted)	3,063 9 2

LONDON.—For paving a portion of the carriageway of the Holloway-Road, N., by the Great Northern Hospital, with wood, for the Vestry of St. Mary, Islington. Mr. J. Patten Barber, Chief Surveyor:—

Messrs. Mowlem & Co.	£618 14 6	Wm. Griffiths, 283, Kingsland - road, N.E.*	£1,935 8 4
The Improved Wood Pavement Co.	558 6 2		
Wm. Griffiths, 283, Kingsland-road, N.E. *	527 16 0		

* Accepted.

LONDON.—For paving the carriageway of Park-street, N., with wood, for the Vestry of St. Mary, Islington. Mr. J. Patten Barber, Chief Surveyor:—

Mowlem & Co.	£2,189 17 6	Wm. Griffiths, 283, Kingsland - road, N.E.*	£1,935 8 4
The Improved Wood Pavement Co.	2,025 16 8		

*Accepted.

LONDON.—For alterations and new billiard-room to the "Rose and Crown" Hotel, High Cross, Tottenham, for Mr. Morris Benjamin. Mr. John E. Pinder, architect, Bridge House, South Tottenham:—

Godfrey & Son	£920	Green & Smith	£768
H. Knight & Son	893	W. Smith, Camberwell *	729

* Accepted.

LONDON.—For alterations and additions to the Victoria Hotel, St. Anne's-road, Stamford Hill, for Mr. E. Anderson. Mr. John E. Pinder, architect, Bridge House, South Tottenham:—

F. Voller	£873	S. Goodall	£820
Green & Smith	858	Drew & Cadman, Holborn *	692
E. Todd	825		

* Accepted.

LONDON.—For extension of shop premises, 52, West Green-road, Tottenham, for Mr. J. Nicholson. Mr. John E. Pinder, architect, Bridge House, South Tottenham:—

H. Knight & Son	£147	Green & Smith, South Tottenham (accepted)	£121
A. Porter	127		

LONDON.—For the erection of boundary walls, &c., disinfecting station, Seven Sister's-road, for the Vestry of St. Mary, Islington. Mr. J. Patten Barber, Surveyor, Vestry Hall, Upper-street, London, N.:—

A. T. Hawkins	£669 9 0	Stevens Bros.	£585 11 5
F. A. Jackson & Sons	649 0 0	Killingback & Co., James-street, Kentish Town (accepted)	535 0 0
Lown & Sons	627 0 0		
I. Yates & Co.	622 4 6		
Morrison & Goodwin	608 8 6		

LONDON.—For alterations, &c., at the Hermes Hill Steam Laundry, Pentonville, N., for Mr. A. Barton:—

G. Matthews	£307 6	R. Hancock	£220 0
Marchant & Hirst	269 0		

LONDON.—For interior and exterior painting of the Langford-road School, for the School Board for London. Mr. T. J. Bailey, Architect:—

B. E. Nightingale	£395 0	J. M. Macey & Son	£391 0
W. Hammond	392 4	Marchant & Hirst	369 0

LONDON.—For exterior painting at the Victoria School, Starch Green, for the School Board for London:—

Stevens Bros.	£159	Polden	£113
Lyford	130	Marchant & Hirst	90

LONDON.—For interior painting, &c., of Portman-street School, for the School Board for London. Mr. T. J. Bailey, Architect:—

D. Gibb & Co.	£323 0 0	Marchant & Hirst	£260 0 0
J. S. Gibb	305 10 0	A. W. Derby	236 0 0
Knight & Son	282 0 0	T. White & Son	210 2 10

LONDON.—For interior painting, &c., of Southwark Park School, for the School Board for London. Mr. T. J. Bailey, Architect:—

Leney	£521 10	W. H. Castle	£323 0
Holliday & Greenwood	377 0	H. J. Williams	297 0
Summers	337 6	Marchant & Hirst	249 0

LONDON.—For exterior painting of Brackenbury-road School, for the School Board for London. Mr. T. J. Bailey, Architect:—

Lyford	£179	Hulden	£132
Marchant & Hirst	150	Peattie & Axtell	123

LONDON.—For alterations, additions, and new bar-fitting, at the "Old King's Arms," Short's Gardens, Long Acre, for Mr. Bishop. Mr. James Warne, architect, No. 1, Montpellier-road, Peckham, S.E.:—

Hopkins	£473	Simpson & Cove *	£445

* Accepted.

LONDON.—For alterations and additions at the "Albany Arms," Albany-road, S.E., for Mr. Trew. Mr. James Warne, architect, 1, Montpellier-road, Peckham:—

Hopkins	£194 0	Simpson & Cove *	165 0
Tyerman	184 0	Cole (too late)	160 0
Ford	168 10		

* Accepted.

LONDON.—Accepted for additions to 89, Denmark Hill. Mr. E. J. Strevens, architect, 246, Camberwell-road:—

Simpson & Cove £265

LONDON.—For alterations and additions to the Stoneleigh Depository, Stoke Newington, N., for Messrs. Hibbard & Sons, Ltd. Mr. H. Edmund Mathews, architect, 11, Dowgate-hill, E.C., and East Grinstead, Sussex:—

J. Chessum & Sons	£795 0	A. W. Elkington	£660 0
C. M. Hazell	685 14		

LONDON.—For repairs and general decorations at the offices of the Mutual Life Assurance Society, 39, King-street, Cheapside. Mr. Ledger, architect:—

Staines & Son	£570	Woodward & Co.	£471
P. Kerridge	485		

LONDON.—Accepted for building laboratory, refitting latrines, and laying new wood-block floors at the Grammar School, High Cross, Tottenham, for the Governors. Mr. Alfred Richards, surveyor, 18, Finsbury Circus, E.C.:—

Henry Knight & Son £833

[Five other tenders.]

LONDON.—For rebuilding Nos. 72 and 73, Gracechurch-street. Mr. Herbert Winstanley and Mr. G. Harold Elphick, joint architects. Quantities by Messrs. Batstone Bros.:—

Turnbull & Son	£3,863	Macfarlane Bros.	£3,690
C. P. Roberts	3,855	Colls & Sons	3,660
Lawrance & Sons	3,700	W. Downs*	3,480
Lovatt	3,700		

* Accepted subject to modifications.

LONDON.—For forming new road and sewers, being in continuation of Fairfax-road, Green Lanes, Hornsey, under the supervision and according to the plans and specification of Mr. George Carter, architect and surveyor, 513, Holloway-road, N.:—

	Preliminary Works.		Completion.
Jackson	£311 0 0		£598 0 0
F. Adams	225 0 0		595 0 0
Bell	173 0 0		356 0 0
Budd & Wallace	149 14 10		345 16 7
Architect's estimate	170 0 0		366 0 0

LONDON.—Accepted for decorations and sanitary work at No. 29, Golden-square, W., for Messrs. Campbell, Reeves, & Hooper:—

	Decorations.	Sanitary work.	Total.
John Appleby, Cornwall-road, S.E.	£250	£58	£308

[No competition.]

LOSTWITHIEL (Cornwall).—For the execution of waterworks (two contracts), for the Mayor and Corporation. Messrs. S. W. Jenkin & Son, engineers, Liskeard:—

	Contract No. 1.	Contract No. 2.	Total.
Parkinson & Symons	£2,458 0 0	£420 0 0	£2,878 0 0
James Julian	1,940 0 0	499 0 0	2,439 0 0
Absalom Delbridge	1,789 0 0	405 0 0	2,194 0 0
Henry Roberts	1,690 0 0	389 0 0	2,079 0 0
W. H. Stephens	1,487 7 3	513 0 6	2,000 7 9
Herbert Weldon	1,570 0 0	430 0 0	2,000 0 0
T. H. Green	2,175 15 0	—	—
J. Bennett	1,900 0 0	—	—
Hawken & Best	1,705 0 0	—	—
W. H. Thomas & Son	1,595 0 0	—	—
D. H. Porter	1,420 0 0	—	—
Oliver & Menear, St. Blazey, Cornwall*	—	—	1,996 3 9

* Accepted; contracts combined.

MAIDSTONE.—Accepted for the supply of road materials for the Urban Sanitary Authority. Mr. F. Bunting, Borough Surveyor, Fair Meadow, Maidstone:—

	s.	d.	
James Runnalls, 550 tons Penlee stone (unbroken)	9	0	per ton.
Mowlem & Co., 550 tons Guernsey granite (unbroken)	8	0	,, ,,
S. Wagon, 340 yds. Aylesford pit flints	3	6	per yd.
S. Wagon, 950 yds. Aylesford gravel	2	6	,, ,,
S. Wagon, 115 yds. Aylesford sand	2	6	,, ,,
A. Hutson, 250 yds. Wateringbury shingle	3	8½	,, ,,
W. H. Bensted & Son, tar concrete (coarse)	13	6	,, ,,
W. H. Bensted & Son, tar concrete (fine)	15	0	,, ,,
Messrs. J. Ellis & Co., J. S. Gabriel, J. H. Bridge, and C. S. Craven (unbroken) Kentish ragstone	3	6 to 3	9 ,,

MERTHYR TYDVIL.—For the erection of public offices and county courts, for the Local Board. Mr. E. A. Johnson, architect, Abergavenny. Quantities by architect:—

	In stone.	In brick.
E. Thomas	£14,487	£14,693
D. Jenkins	13,500	13,630
Bowers & Co.	13,225	12,910
T. Rees	12,999	12,899
J. D. Williams	12,450	12,575
W. Lissaman, Jun.	12,200	12,250
J. Linton	12,178	12,361
H. Gibbon, Cardiff*	11,400	11,668

* Accepted.

[Architect's estimate, £11,960.]

NEW BARNET (Herts.).—For business premises and photographic studio on the Triangle, New Barnet, for Mr. Hull. Mr. E. Fergusson Taylor, surveyor:—

G. Marriott	£760	A. Voller*	£595
G. Daniels	605		

* Accepted.

NEWBURY.—For additions, &c., to school premises, for the Managers of the Boys' British School. Mr. Walter H. Bell, architect, The Market-place, Newbury:—

W. Church	£168 9 0	Pope & Co.	£143 4 3
G. Head	155 9 0	A. Houghton	139 0 0
A. Chivers	149 19 7	T. Taylor, Newbury *	132 10 6
E. C. James	148 0 0		

* Accepted.

NEWTOWNARDS (Ireland).—For the construction of 563 yds. pipe-sewers, &c., Comber, for the Union Guardians. Mr. P. C. Cowan, C.E., 48, Upper Arthur-street, Belfast:—

John Graham Jun.	£360 15 0	Workman & Co., Belfast (accepted)	£255 0 0
R. Connor	347 10 0		
T. C. Rayner	296 9 9		

NOTTINGHAM.—For erection and completion of new warehouse (exclusive of foundations, plumbers' and glaziers' work), Stoney-street, Nottingham. Mr. John Howitt, architect, 3, King John's Chambers, Nottingham:—

A. B. Clarke	£12,000	J. Shaw	£11,040
Fish & Son	11,816	F. Messom	11,025
J. J. Adams	11,500	W. Woodsend	10,995
H. Vickers, sen.	11,400	Enoch Hind (accepted)	10,98
Dennett & Ingle	11,040		

NORTHAMPTON.—For additions to Hospital for Infectious Diseases, Kingsthorpe, for the Corporation of Northampton. Mr. W. D. Gibbins, Borough Engineer, Town Hall, Northampton. Quantities by the Engineer:—

J. Dunckley	£3,261 0 0	Green, Bros	£2,778 0 0
G. F. Sharman	3 129 11 4	J. Garrett	2 753 0 0
W. J. Flavell	3,043 13 0	A. P. Hawtin	2,725 0 0
G. Branson & Son	3,000 0 0	J. Woodford & Son	2,685 0 0
J. Chown	2,885 0 0	G. Fisher, Northampton, (accepted)	2,673 0 0
E. Archer	2 821 0 0		

[Engineer's estimate, £2,667].

POWBURN.—Accepted for alterations to "Plough Inn," and adjoining property, Powburn, Northumberland. Mr. George Reavell, jun., architect, Alnwick:—
W. Dryden & Son, Glanton, R.S.O. £759

RAMSBOTTOM (Lancs.).—Accepted for the erection of technical school buildings, Stubbins-lane, for the Local Board. Mr. Arthur W. Smith, surveyor, Calendar-street, Ramsbottom:—
Platt & Castle, Ramsbottom £3,624 11

ROCHESTER.—For the erection of a factory, Eastgate, for Mr. Walter Dove. Mr. Walter Banks, architect, 5, Theobald-square, Rochester:—

M. C. Fenton	£787 0 0	W. Coker	£635 10 0
C. E. Skinner	778 0 0	Geo. West, Strood *	
West Bros.	685 0 0	* Accepted.	625 0 0

RUGBY.—For the erection of stabling, for the Rugby Co-operative Society. Mr. J. T. Franklin, architect, 40, Bridget-street, Rugby. Quantities by architect:—

Parnell & Son	£1,229	Hollowell	£1,163
Fester & Dickson	1,223	Young	1,143
Over	1,177	Satchell (accepted)	1,073

[All of Rugby.]

TEDDINGTON.—For the supply of the following road materials for the Teddington Local Board. Mr. H. York, Surveyor: about 1,800 cube yds. of hand-broken Kentish Brown Pit flints; about 430 cube yds. of broken Guernsey granite; about 10 000 ft. run of Norway granite channelling; about 166 tons of Norway granite pitchers:—

FLINTS *(per cube yard)*.

	s. d.		s. d.
Mowlem & Co.	10 0	Lake	6 3
Sommerfeld	6 5	Horsford & Co.	6 3
Dalby	6 4	Knight, Rochester*	6 2
Gabriel	6 3½		

BROKEN GRANITE *(per cube yard)*.

R. L. S. Fennings †	17 3	Mowlem & Co.	15 9
Griffiths	16 6	Nowell & Robson, Kensington *	15 3
A. F. Manuelle	16 2		
Le Maitre	15 11		

Per ton.

Trickett & Son	15 9	Cooper Bros.	15 4

Basalt (per cube yard).

Lyon & Co., Mark-lane 14 7

Leicestershire (per ton).

Nowell & Robson, Kensington, (delivered at station) 13 9

CHANNELLING *(per foot run)*.

	s. d.		s. d.
Mowlem & Co.	1 5	Nowell & Robson	1 3
Broderick	1 4½	A & F. Manuelle ‡	1 2½
Adamson, Kingston †	1 3	Maskey	1 2½
Trickett & Sons	1 3½	Van Praagh & Co. ‡	1 1½
Blickfeldt & Co.	1 3½	Cooper Bros. ‡	1 1½
Sheehan	1 3	Gabriel, Lambeth * ‡	1 1½
Griffiths	1 3		

Irish Granite.

Gordon & Son	1 2½	Robinson (for 4,020 ft.)	1 0

Blue Pennant.

Free & Son	1 0

SETTS *(per ton)*.

Norway Setts.

Broderick	£1 10 6	Nowell & Robson	£1 6 0
Blickfeldt	1 8 6	Van Praagh & Co.	1 5 0
Mowlem & Co.	1 7 6	Sheehan	1 5 0
Trickett & Son	1 7 3	Maskey	1 4 6
A. F. Manuelle	1 6 0		

Leicestershire.

Nowell & Robson	£1 6 0	Gabriel	£1 5 6

Irish.

Gordon & Son	£1 6 0

Aberdeen.

Adamson, Kingston†	£1 17 0	Constable (4 by 6)	£1 4 0
Manuelle	1 4 6		

Guernsey.

Griffiths	£1 5 0
Nowell & Robson, Kensington*	1 3 6

* Accepted. † Received late.
‡ If dressed as kerb, ½d. foot extra.

UPWEY (Dorset).—Accepted for alterations and additions to house at Upwey, Dorset, for Miss Miller. Mr. J. Feacey, architect:—
F. Merrick & Son, Glastonbury £332 0 0

STAFFORD.—For additions, &c., to shoe manufactory, Rowley-street, for Mr. David Hollin. Mr. George Wormal, architect, Stafford. Quantities by architect.

Lovatt	£820 0 0	Adams & Pemberton, Stafford *	£658 0 0
F. Espley	723 14 6		
W. T. Woollams	680 0 0		

* Accepted.

STRATTON ST. MARGARET (Wilts).—For the erection of school buildings (infants' school), for the School Board. Mr. Wm. Drew, Architect to the Board, 22, Victoria-street, Swindon. Quantities by the Architect.

W. Chambers	£1,800 10	T. Colborne	£1 569 10
Wall & Hook	1,673 0	G. Wiltshire	1,550 0
T. Barrett	1,638 0	H. Flewelling, Wootton Bassett (accepted)	1,491 0
H. Looker	1,520 0		
C. Williams	1,607 0		

SOUTH OWRAM (Yorks.).—Accepted for the erection of a mission room, Brookfoot. Messrs. Jackson & Fox, architects, 22, George-street, Halifax:—
William Crossley, Lightcliffe £1,200

SWINDON.—For enlargement of Even Swindon Schools for the Swindon School Board. Mr. William Drew, architect, Swindon. Quantities by the architect:—

	Mixed School.	Infant School.	Total.
F. Reeks	3 570 19 2	1,239 12 6	4,810 11 8
W. Chambers	2 949 18 0	1,017 13 6	3,967 8 6
W. Jones & Son	2 960 0 0	1,000 0 0	3,960 0 0
H. Flewelling	2 873 0 0	973 0 0	3,846 0 0
G. Wiltshire	2,840 0 0	950 0 0	3,790 0 0
T. Barrett	2,815 2 7	950 17 10	3,766 0 5
C. Williams	2,707 0 0	937 0 0	3,644 0 0
*T. Colborne, New Swindon	2,592 8 6	916 1 4	3,508 9 10

* Accepted subject to the approval of the Education Department.
[Architect's estimate, £3 910.]

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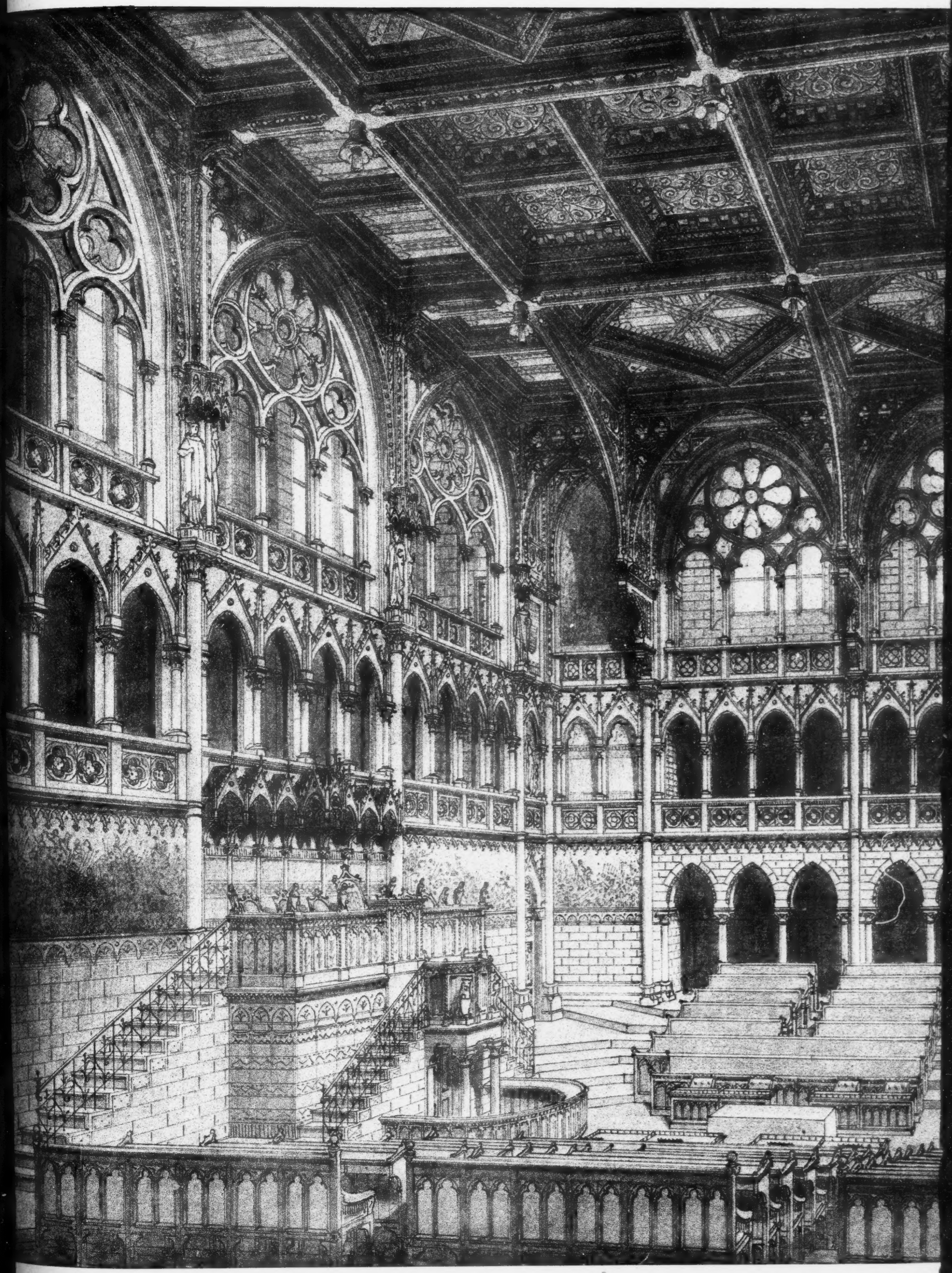

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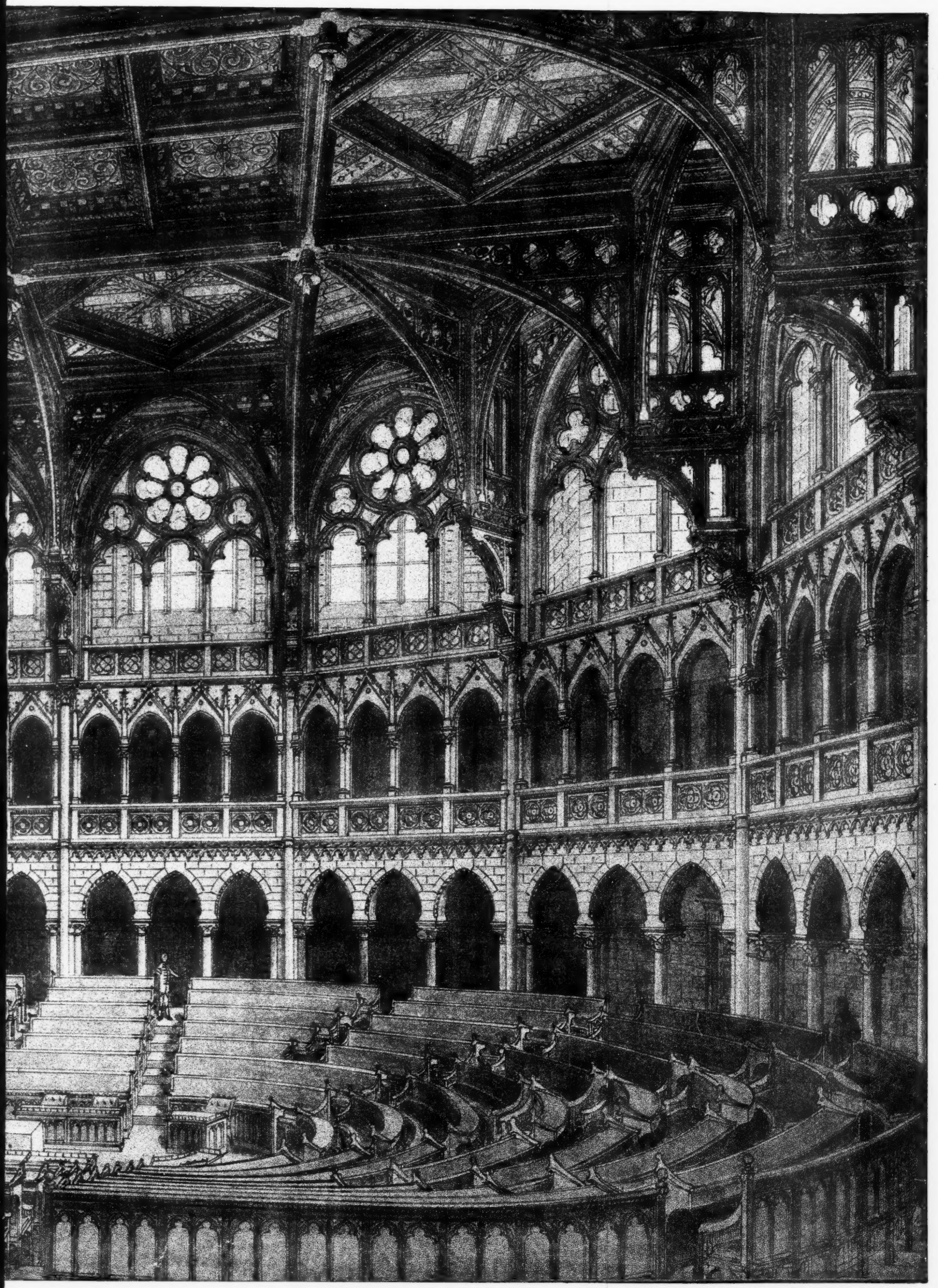

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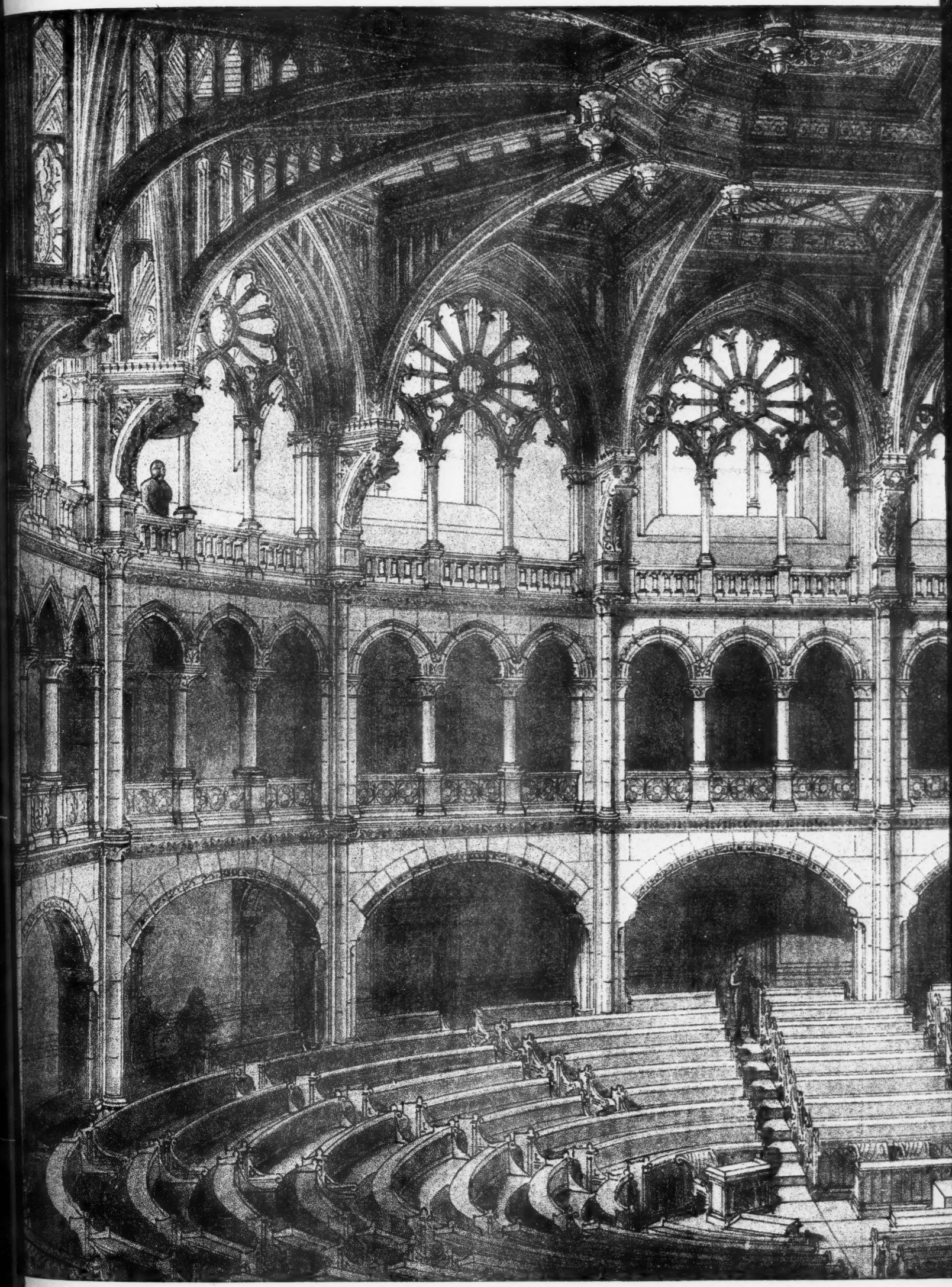

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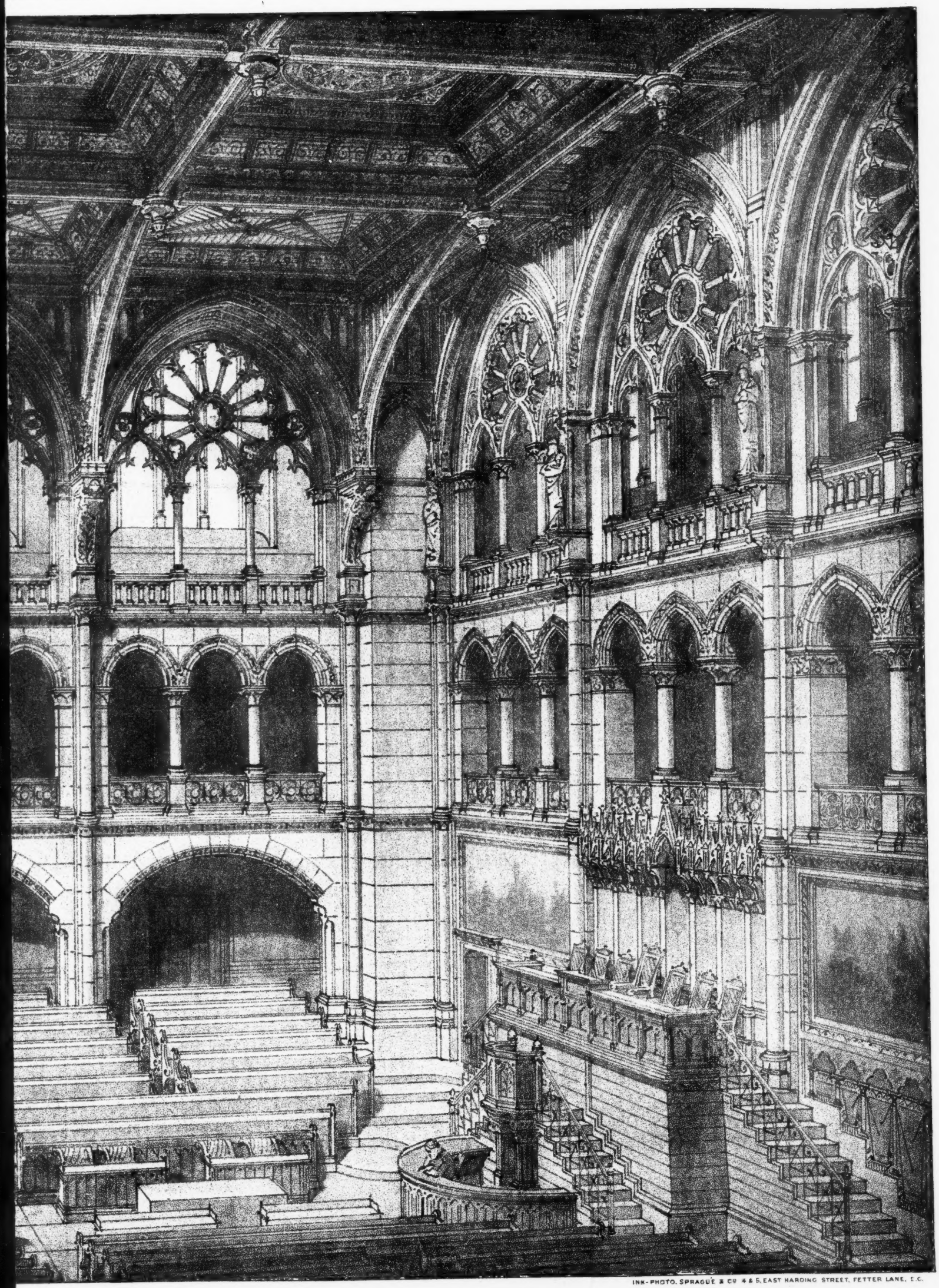

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